SONY

UHF SYNTHESIZED DIVERSITY TUNER

WRR-801A

UHF SYNTHESIZED TUNER UNIT

WRU-801A

SERVICE MANUAL

AU Model

⚠ WARNING

This manual is intended for qualified service personnel only.

To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

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CN-1510 BOARD 7-6

SONY

3-860-930-**31**(1)

UHF Synthesized Diversity Tuner

Operating Instructions

WRR-801A

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AU

SECTION 1
OPERATING INSTRUCTIONS

This section is extracted from operation manual

Precautions

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

On operation

- The tuner must be used within a temperature range of 0°C to 40°C (32°F to 104°F). Avoid using the tuner for extended periods at extremely high temperatures or placing it in direct sunlight, especially outdoors, because this may damage the finish of the case. Never install the tuner on or near a heat source, such as lighting equipment or power amplifiers.
- To avoid using in very humid or dusty places, because such use may shorten the life of the tuner.
- To avoid degradation of the signal-to-noise ratio, do not use the tuner in noisy places or in locations subject to vibration, such as the following:
  - near electrical equipment, such as motors, transformers or dimmers
  - near air conditioning equipment or places subject to direct air flow from an air conditioner
  - near public address loudspeakers
  - where adjacent equipment might knock against the tuner
- Switching lights on or off may produce electrical interference over the entire frequency range. Position the tuner and the wireless microphones so that interference is minimized.
- The tuner is precisely adjusted at the factory and no adjustment before use is necessary. Do not touch the inside of the tuner or try to repair it by yourself.

On cleaning

Clean the tuner with a dry, soft cloth. Never use thinner, benzene, alcohol or any other chemicals, since these may damage the finish.

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Overview

The WRR-801A is a reliable UHF synthesized diversity tuner for the 800-MHz-band Sony UHF wireless microphone system which uses the frequency bands allocated for UHF TV broadcasting.
This tuner is designed to enable simultaneous use of multiple channels when channels are selected according to the Sony channel plan.
Installing six WRU-801A UHF Synthesized Tuner Units will enable six-channel operation on the tuner.
At shipping, one tuner unit is installed in the tuner, and additional tuner units (sold separately) can be installed easilly.

Features

Phase Locked Loop (PLL) synthesized system

The WRR-801A has a refined phase locked loop (PLL) synthesizer circuit and covers two UHF TV channels. It operates on 102 channels over a 14-MHz frequency.

Preprogrammed wireless channel plan for simultaneous multichannel operation

The WRR-801A has many preprogrammed, easily settable channels for simultaneous multichannel operation. One group allows setting of 102 channels. The tuner also has 12 preset groups of channels, each of which permits simultaneous operation of 5, 6, 8, 9 or 12 channels without the effects of intermodulation.

Modular multichannel reception

By installing optional WRU-801A UHF Synthesized Tuner Units, you can receive up to six channels on one WRR-801A unit.

Versatile display

A liquid-crystal display provides a variety of information, including the levels of the reception channels, RF information and transmitter battery condition.

Space diversity reception system

The WRR-801A provides stable signal reception with minimum dropout.

Tone squelch circuit for noise elimination

A built-in squelch circuit eliminates noise and signal interference when the WRR-801A is in signal reception standby mode.

Compander system

A compander (compressor/expander) system enables stabilized wireless transmission over a wide dynamic range.

Rack mounting

The WRR-801A can be mounted in an EIA standard 19-inch rack (1U size).

System Configuration

The tuner can be used with a Sony UHF synthesized wireless microphone or UHF synthesized transmitter among the models listed in the table below.

Sony 800 MHz-band system models

Frequency band		**Model name**	
TV channel	Frequency (MHz)	Transmitter or microphone	Tuner
66	792.250 to 798.500	WRT-800A (66) WRT-805A (66) WRT-810A (66) WRT-820A (66)	WRR-800A (66) WRR-801A (66) WRR-810A (66) WRR-820A (66)
67	799.250 to 805.500	WRT-830A (66) WRT-860A (66) WRT-867A (66)	WRR-840A (66) WRR-850A (66) WRR-860A (66)

Wirelss Channels Selectable

The tuner stores thirteen groups of selectable channels: groups 00 (102 channels), 11 (12 channels), 12 (9 channels), 13 (9 channels), A1 (8 channels), A2 (6 channels), A3 (6 channels), L1 (6 channels), L2 (6 channels), M1 (6 channels), M2 (5 channels), H1 (8 channels) and H2 (8 channels).
Channel groups other than group 00 are designed so that all channels of one group can be used simultaneously within the same UHF wireless microphone system without causing intermodulation. It is therefore recommended that you usually use a channel group other than group 00 unless the use of group 00 is specifically necessary.
Each “wireless channel” is represented by a 2-digit TV channel number and a 2-digit number, for example: 66-23.

Note

To eliminate interference or noise, please note the following.

- Do not use two or more wireless microphones or transmitters whose wireless channels are the same.
- If there is a TV broadcasting station nearby, to avoid possible interference from its broadcasting, do not use that station’s channel.
- The number of wireless microphone channels actually usable in a multi-channel system may be smaller than the normal capacity of that system if there is interference from TV broadcasting or other RF signals.
- When operating two or more UHF wireless microphone systems using the same wireless channel in the same group, ensure that the systems are at least 100 m (330 feet)[1] apart as far as they are installed within sight of each other.

1) The distance depends on the operating environment and conditions.

Wireless Channel Lists

Group 00: All channel access
Use only for a one-channel system or to scan for open channels.

WL Channel	Frequency (MHz)	WL Channel	Frequency (MHz)
66-01	792.250	67-01	799.250
66-02	792.375	67-02	799.375
66-03	792.500	67-03	799.500
66-04	792.625	67-04	799.625
66-05	792.750	67-05	799.750
66-06	792.875	67-06	799.875
66-07	793.000	67-07	800.000
66-08	793.125	67-08	800.125
66-09	793.250	67-09	800.250
66-10	793.375	67-10	800.375
66-11	793.500	67-11	800.500
66-12	793.625	67-12	800.625
66-13	793.750	67-13	800.750
66-14	793.875	67-14	800.875
66-15	794.000	67-15	801.000
66-16	794.125	67-16	801.125
66-17	794.250	67-17	801.250
66-18	794.375	67-18	801.375
66-19	794.500	67-19	801.500
66-20	794.625	67-20	801.625
66-21	794.750	67-21	801.750
66-22	794.875	67-22	801.875
66-23	795.000	67-23	802.000
66-24	795.125	67-24	802.125
66-25	795.250	67-25	802.250
66-26	795.375	67-26	802.375
66-27	795.500	67-27	802.500
66-28	795.625	67-28	802.625
66-29	795.750	67-29	802.750
66-30	795.875	67-30	802.875
66-31	796.000	67-31	803.000
66-32	796.125	67-32	803.125
66-33	796.250	67-33	803.250
66-34	796.375	67-34	803.375
66-35	796.500	67-35	803.500
66-36	796.625	67-36	803.625
66-37	796.750	67-37	803.750
66-38	796.875	67-38	803.875
66-39	797.000	67-39	804.000
66-40	797.125	67-40	804.125
66-41	797.250	67-41	804.250
66-42	797.375	67-42	804.375
66-43	797.500	67-43	804.500
66-44	797.625	67-44	804.625
66-45	797.750	67-45	804.750
66-46	797.875	67-46	804.875
66-47	798.000	67-47	805.000
66-48	798.125	67-48	805.125
66-49	798.250	67-49	805.250
66-50	798.375	67-50	805.375
66-51	798.500	67-51	805.500

Wirelss Channels Selectable

Group 11: 12-channel group
Use when TV channels both 66 and 67 are available.

WL Channel	Frequency (MHz)
66-02	792.375
66-07	793.000
66-17	794.250
66-19	794.500
66-35	796.500
66-43	797.500
67-08	800.125
67-19	801.500
67-33	803.250
67-39	804.000
67-42	804.375
67-46	804.875

Group 12: 9-channel group
Use when TV channel 66 is on the air.

WL Channel	Frequency (MHz)
67-01	799.250
67-03	799.500
67-11	800.500
67-16	801.125
67-23	802.000
67-27	802.500
67-41	804.250
67-44	804.625
67-50	805.375

Group 13: 9-channel group
Use when TV channel 67 is on the air.

WL Channel	Frequency (MHz)
66-01	792.250
66-03	792.500
66-11	793.500
66-16	794.125
66-23	795.000
66-27	795.500
66-41	797.250
66-44	797.625
66-50	798.375

Group A1: 8-channel group
Use when both TV channels 66 and 67 are available.

WL Channel	Frequency (MHz)
66-02	792.375
66-04	792.625
66-12	793.625
66-24	795.125
67-02	799.375
67-29	802.750
67-35	803.500
67-44	804.625

Group A2: 6-channel group
Use when TV channel 66 is on the air.

WL Channel	Frequency (MHz)
67-06	799.875
67-15	801.000
67-21	801.750
67-32	803.125
67-46	804.875
67-50	805.375

Group A3: 6-channel group
Use when TV channel 67 is on the air.

WL Channel	Frequency (MHz)
66-06	792.875
66-15	794.000
66-21	794.750
66-32	796.125
66-46	797.875
66-50	798.375

Group L1: 6-channel group
Use when TV channel 67 is on the air.

WL channel	Frequency (MHz)
66-01	792.250
66-03	792.500
66-09	793.250
66-14	793.875
66-18	794.375
66-21	794.750

Group M1: 6-channel group
Use when TV channel 67 is on the air.

WL channel	Frequency (MHz)
66-31	796.000
66-33	796.250
66-39	797.000
66-44	797.625
66-48	798.125
66-51	795.500

Group H1: 8-channel group
Use when TV channel 66 is on the air.

WL channel	Frequency (MHz)
67-03	799.500
67-05	799.750
67-11	800.500
67-16	801.125
67-26	802.375
67-35	803.500
67-38	803.875
67-42	804.375

Group L2: 6-channel group
Use when TV channel 67 is on the air.

WL channel	Frequency (MHz)
66-02	792.375
66-04	792.625
66-10	793.375
66-15	794.000
66-19	794.500
66-22	794.875

Group M2: 5-channel group
Use when TV channel 67 is on the air.

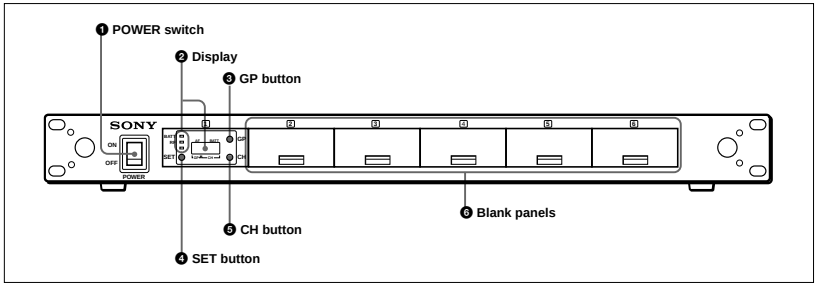
WL channel	Frequency (MHz)
66-32	796.125
66-34	796.375
66-40	797.125
66-45	797.750
66-49	798.250

Group H2: 8-channel group
Use when TV channel 66 is on the air.

WL channel	Frequency (MHz)
67-06	799.875
67-08	800.125
67-12	800.625
67-22	801.875
67-25	802.250
67-33	803.250
67-40	804.125
67-45	804.750

Location of Parts and Controls

Front Panel



❶ POWER switch
Turns the power on and off.

❷ Display
Displays the status of the tuner and the group and channel assigned to the unit.

For details, see the following section "Display".

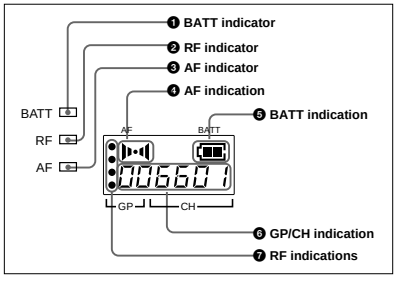
❸ GP (group) button
Press to change the group or to display frequencies.

❹ SET button
Press to change the group or channel.

❺ CH (channel) button
Press to change the channel in a group.

❻ Blank panels
Remove these panels to install optional WRU-801A UHF Synthesized Tuner Units.

Display



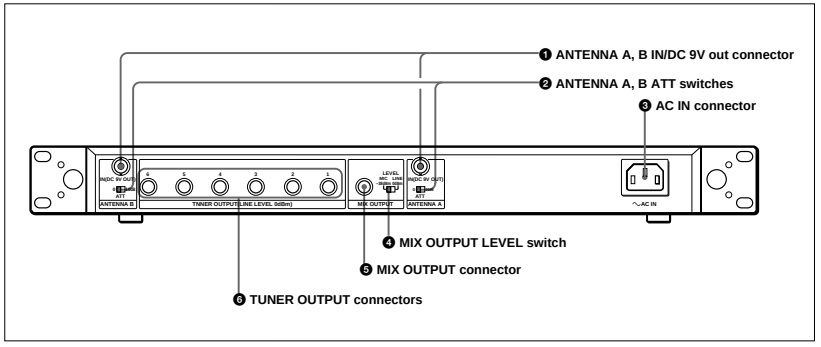
❶ BATT (battery) indicator
❺ BATT (battery) indication
Indicate the condition of the wireless microphone transmitter batteries. The indicator and indication start flashing about one hour before the transmitter batteries go flat.

❷ RF (radio frequency) indicator
❼ RF (radio frequency) indications
The indicator lights and the indications (dots) appear when the antenna reception is optimal. Depending on the RF input level, the number of dots changes.

❸ AF (audio frequency) indicator
❹ AF (audio frequency) indication
The indicator lights and the indication appears when the audio output level is higher than the reference level.

❻ GP/CH (group/channel) indication
Shows the reception channel group and respective channel number.
Pressing the GP button changes this indication to the frequency indication.

Rear Panel


❶ ANTENNA A, B IN/DC 9V out connector
❷ ANTENNA A, B ATT switches
❸ AC IN connector
❹ MIX OUTPUT LEVEL switch
❺ MIX OUTPUT connector
❻ TUNER OUTPUT connectors

❶ ANTENNA A, B IN/DC 9V OUT (antenna A, B input/DC power output) connectors (BNC type)
Connect the supplied antenna or an optional AN-820A UHF Antenna. To connect two of these units, these connectors are connected to the ANTENNA OUT connectors of the WD-820A UHF Antenna Divider. When the AN-820A is connected, 9 V DC power is supplied to the antenna's internal booster through these connectors.

Note
Never short-circuit these connectors.

❷ ANTENNA A, B ATT (attenuation) switches
Select the RF attenuation as 0 dB or 10 dB. (Normally, set the switches to 0 dB.)

❸ AC IN connector
Connects to an AC power source with the supplied AC power cord.

❹ MIX OUTPUT LEVEL switch
Selects the mixed output level as 0 dBm or –38 dBm. Set this switch according to the input level of the equipment connected to the tuner.

❺ MIX OUTPUT connector (ø6.3 phone balanced (1/4 inch TRS))
Supplies mixed audio signals of six tuner units. You can connect this to the audio input connector of a mixer, amplifier or similar equipment.

❻ TUNER OUTPUT (tuner sound output) connectors (ø6.3 phone balanced (1/4 inch TRS))
Each connector supplies the audio signal from the corresponding tuner unit. You can connect this to the audio input connector of a mixer, amplifier, or similar equipment.

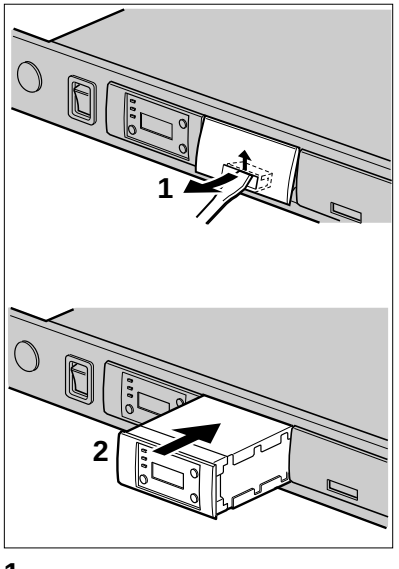
Installing a WRU-801A Tuner Unit

Up to five WRU-801A UHF Synthesized Tuner Units can be installed.

Notes

- Be sure to power this unit off before installing the WRU-801A.
- The buttons and display on the front panel of the WRU-801A may be damaged if they are gripped too strongly. Always hold the WRU-801A by the side.
- Do not touch the connectors on the rear panel of the WRU-801A.
- Be careful of static electricity.

Installing a WRU-801A

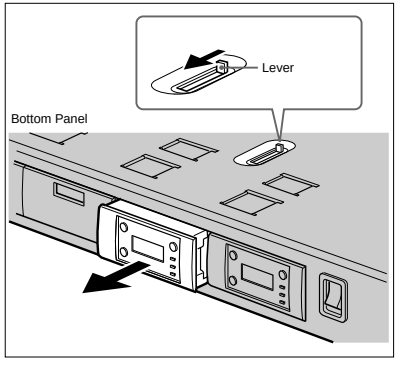


1 Power the tuner off and remove the blank panel with a screwdriver or other tool.

2 Hold the WRU-801A by the side and insert into the slot. Push in until you hear a click.

Removing a WRU-801A

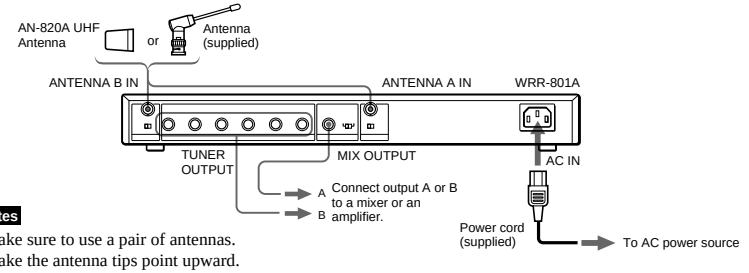
On the bottom panel of the tuner, locate the lever corresponding to the slot where the WRU-801A is installed and pull the lever forward. The WRU-801A is ejected from the slot.



Connections

Basic Connections

When using 1 to 6 channels

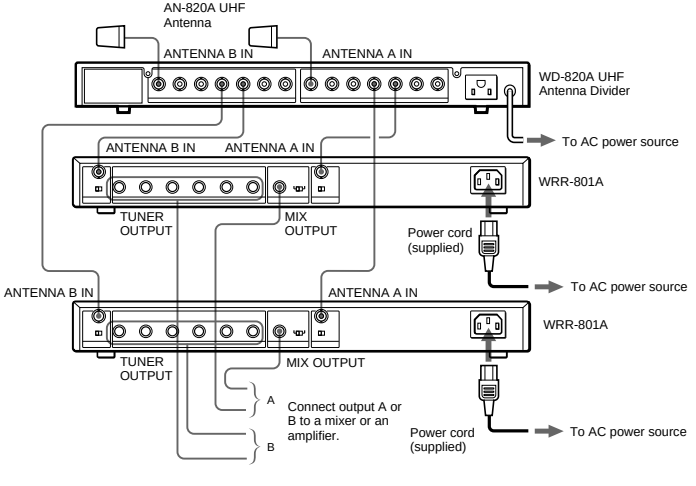


Notes

- Make sure to use a pair of antennas.
- Make the antenna tips point upward.

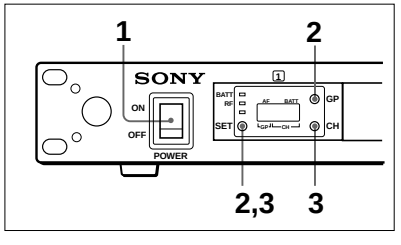
Connection for Multichannel Operation

When using 7 to 12 channels



Channel Setting

Take the following precautions to prevent interference and noise.
- Do not simultaneously use two or more microphones and transmitters that are set to the same channel.
- When simultaneously using two or more tuners, always set the tuners to different channels within the same group (other than group 00).
- Separate the reception antennas and the transmitter by more than 3 meters (9 feet 11 inches).



1 Turn the POWER switch on.

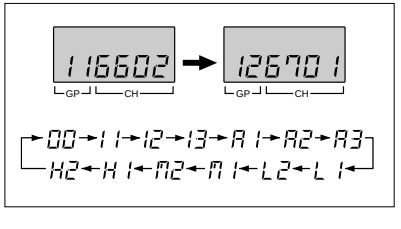
The message “AS 66” appears on the display, and then the current tuner status is displayed.

Note

Turn the POWER switch on after reducing the volume of equipment connected to the TUNER OUTPUT connector. Otherwise, noise will be heard when the power is turned on.

2 Press and hold down the SET button, and press the GP button in 3 seconds to select a group.

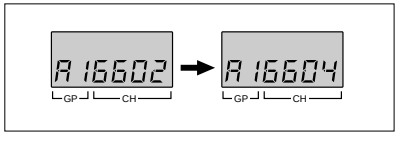
Each time you press the GP button, the GP indication changes as shown in the following figure. To change the indication continuously, press and hold down the GP button.



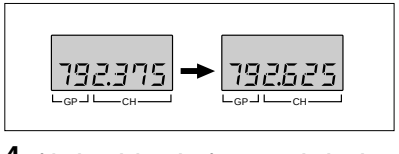
The CH indication shows the lowest frequency channel of the selected group. For group 00, however, the channel selected last is displayed. Releasing the buttons automatically cancels the group and channel selection mode, and the currently displayed group is selected.

3 Press and hold down the SET button, and press the CH button in 3 seconds to select a channel.

Similar to step **2**, each time you press the CH button, the CH indication changes in the order shown in the group and reception channel list. *(See “Wireless Channel Lists” on page 6.)*
If you press the CH button when the last channel of the selected group is displayed, the first channel of the group will be displayed.



Selecting the reception channel by frequency
Press the GP button.
This changes the GP/CH indication to a frequency indication.
To change a frequency, press the CH button while keeping the SET button pressed. (A higher frequency will be displayed.)
Press the GP button again to change the frequency indication to a GP/CH indication.



4 If the desired channel or frequency is displayed, release the SET button and CH button.

The selected channel is set.

To store the selected group and channel
Leave the indication unchanged for 5 seconds.
The group and channel set in the procedure explained above are stored in memory.

Automatic Search and Setting of Available Channels

When you use the tuner in a multi-channel operation system, you can assign available channels to all tuner units by operating the first tuner unit only.

1 Power off all wireless microphones and transmitters.

2 On the first tuner unit, select the group to be used.

3 Press the SET button on the first tuner unit and hold it down for 3 seconds.

The first tuner unit searches for available channels in the selected group. After that, available channels in the group are so assigned to all tuner units automatically that two or more tuner units may not use the same channel.
After automatic setting, you can adjust the groups and channels of individual tuner units.

Notes
- Do not use group 00.
- If no channels are available, “NO CH” is displayed and channel setting is aborted.

When using two tuners

When you use two tuners, proceed as follows to ensure that the two tuners do not use the same channel settings.

1 Follow the procedure explained above to set the group and channel of the first tuner.

2 Power on the wireless microphones or transmitters after adjusting them to the channels of each tuner unit.

Note

If the microphones or transmitters are not powered on, the two tuners may use the same channel twice.

3 On the first tuner unit of the second tuner, set the same group as selected on the first tuner.

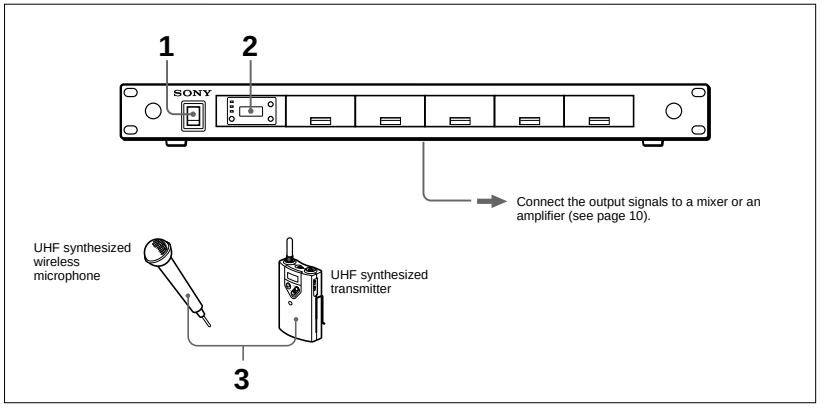
4 Press the SET button of the first tuner unit on the second tuner and hold it down for 3 seconds.

Available channels in the same group (channels not used by the first tuner) are automatically set on the first tuner unit and the other tuner units on the second tuner.

Note

If automatic channel setting does not function well for the 2nd tuner (due to poor reception), set channels manually for the 2nd tuner.

Operation



1 Turn the POWER switch on.

Note

Turn the POWER switch on after reducing the volume of the equipment connected to the TUNER OUTPUT connector. Otherwise, noise will be heard when the POWER switch is turned on.

2 Set the reception channel.

For details on setting the channels on the tuner, see "Channel Setting" on page 12.

3 Turn on the wireless microphone or transmitter. Use the wireless microphone or transmitter to which the same channel is assigned as to the tuner.

If noise is heard

Depending on the environment where the system is installed, outside noise or radio wave may disrupt the transmission of certain channels.
To select a channel under this circumstance, turn off the wireless microphone and transmitter. Then select a channel at which the RF indicator is off. (A channel free from noise or radio wave interference is selected.) Set the same channel on the microphone or transmitter.

Muting Functions

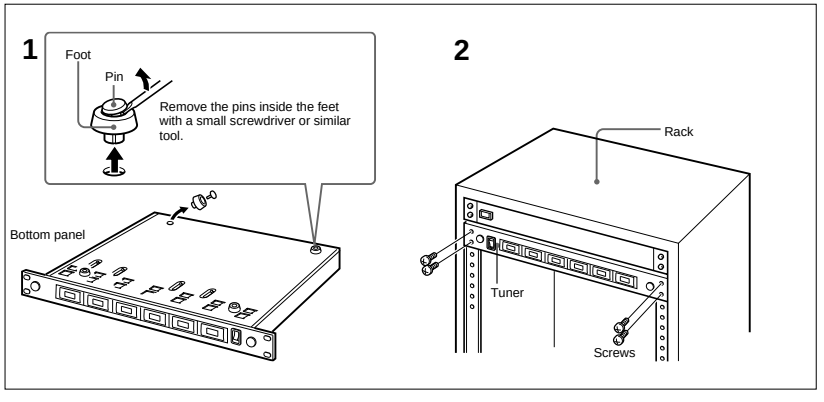
This tuner has the following three muting functions, which work in combination.

(1) Muting by RF input level
As sufficient S/N for the audio output may not be obtained if no RF signal is received or the RF input level is low, the audio output can be muted when the RF input level falls below the muting level.

(2) Tone squelch
The audio output is obtained only when the tuner receives an RF signal which includes a specified tone signal. The audio output is muted to eliminate noise which may be heard when the transmitter is turned on/off or the tuner receives an interference RF signal.

(3) Noise squelch
The audio output is muted to eliminate noise which may be heard when there is such excessive interference RF signal that the tone squelch does not work.

Rack Mounting



1 Remove the feet of the tuner before mounting it on a rack.

2 Mount the tuner on the rack using screws that are at least 12 mm ($^1/_2$ inches) long and that match the diameter of the screw holes on the rack.

Error Messages

Apart from the normal indications, the following error messages may appear on the display.

Message	Meaning	Remedy
Err 01	An error has occurred in the backup memory data.	The memory data is initialized. Reset the group and channel settings.
Err 02	The PLL-synthesized circuit has a malfunction.	Contact your nearest Sony dealer.
NO TONE	As no tone signal is available or a tone signal other than 32.768 kHz is being received, the audio signal output is muted.	The transmitter's tone signal is in trouble. Contact your nearest Sony dealer. If you are using a WRT-810A wireless microphone, a "NO TONE" message appears when you turn off the AF switch, but this is normal.

Specifications

Tuner

Reception type	110KF3E
Circuit system	Dual conversion superheterodyne
Reception frequencies	792.250 to 805.500 MHz
Local oscillators	Crystal controlled PLL synthesizer
Selectivity	60 dB or more (at ±250 kHz detuned)
Spurious rejection ratio	70 dB or more
Image rejection ratio	70 dB or more
Muting level	30 dB μ[1)]
Antenna connectors	BNC-R type (2), 50 ohms
Frequency response	100 to 15,000 Hz ±3 dB
De-emphasis	50 μsec
Signal-to-noise ratio	30 dB or more at an A-weighted RF input level of 20 dBμ 60 dB or more at an A-weighted RF input level of 60 dBμ (±5.0 kHz deviation at 1 kHz modulation)
Distortion	1% or less (±40 kHz deviation at 1 kHz modulation)
Tone signal frequency	32.768 kHz
Output level	0 dBm[2)] (±16 kHz deviation at 1 kHz modulation) (–20 dBm (±5 kHz deviation at 1 kHz modulation))
Mix output level	
LINE	0 dBm (±16 kHz deviation at 1 kHz modulation) (–20 dBm (±5 kHz deviation at 1 kHz modulation))
MIC	–38 dBm (±16 kHz deviation at 1 kHz modulation) (–58 dBm (±5 kHz deviation at 1 kHz modulation))
Output impedance	150 ohms
Output connectors	ø 6.3 phone balanced ($^1/_4$ inch TRS)

General

Power requirements	100~240 V AC, 50/60 Hz
Power consumption	30 W
Power supply for antenna boosters	9 V DC (max. 100 mA)
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	–20°C to +55°C (–4°F to +131°F)
Dimensions	482 × 44 × 300 mm ($19 \times 1\ ^3/_4 \times 11\ ^7/_8$ inches) (w/h/d)
Mass	Approx. 3.8 kg (134 oz)

Accessories supplied

AC power cord (1)
Antennas (2)
Operating Instructions (1)

Design and specifications are subject to change without notice.

1) 0 dBμ=1 μV
2) 0 dBm=0.775 Vrms (600 ohms loaded)

Sony Corporation Printed in Japan

SONY

3-860-931-**31** (1)

UHF Synthesized Tuner Unit

Operating Instructions

WRU-801A

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Specifications

Tuner

Reception type	110KF3E
Circuit system	Dual conversion superheterodyne
Reception frequencies	792.250 to 805.500 MHz
Local oscillators	Crystal controlled PLL synthesizer
Selectivity	60 dB or more (at ±250 kHz detuned)
Spurious rejection ratio	70 dB or more
Image rejection ratio	70 dB or more
Muting level	30 dBμ[1]
Frequency response	100 to 15,000 Hz ± 3 dB
De-emphasis	50 μ sec
Signal-to-noise ratio	30 dB or more at an A-weighted RF input level of 20 dBμ 60 dB or more at an A-weighted RF input level of 60 dBμ (±5 kHz deviation at 1 kHz modulation)
Distortion	1% or less (±40 kHz deviation at 1 kHz modulation)
Tone signal frequency	32.768 kHz
Output level	–8 dBu[2] (±16 kHz deviation at 1 kHz modulation) (–28 dBu (±5 kHz deviation at 1 kHz modulation))
Output impedance	600 ohms or less
Output connector	Multi-connector (10-pin)

1) 0 dBμ=1 μV
2) 0 dBu=0.775 Vrms (unloaded)

General

Power requirements	9 V DC
Current consumption	Approx. 190 mA
Operating temperature	0 to 40°C (32 to 104°F)
Storage temperature	–20 to +55°C (–4 to +131°F)
Dimensions	57 × 26 × 122 mm (2 1/4 × 1 1/16 × 4 7/8 inches) (w/h/d)
Mass	Approx. 160 g (5.7 oz)
Accessories supplied	Operating Instructions (1)

Design and specifications are subject to change without notice.

Overview

The WRU-801A is a reliable UHF synthesized tuner unit for the 800-MHz-band Sony UHF wireless microphone system which uses the frequency bands allocated for UHF TV broadcasting. To use this unit, install it in a Sony WRR-801A UHF Synthesized Diversity Tuner. The unit is designed to enable simultaneous use of multiple channels when channels are selected according to the Sony channel plan. The following are the principal features of this unit.

Phase Locked Loop (PLL) synthesized system
The unit has a refined phase locked loop (PLL) synthesizer circuit and covers two UHF TV channels. It operates on 102 channels over a 14-MHz frequency.

Preprogrammed wireless channel plan for simultaneous multichannel operation
The unit has many preprogrammed, easily settable channels in a simultaneous multichannel operation. One group allows setting of 102 channels. The unit also has 12 preset groups of channels, each of which permits simultaneous operation of 5, 6, 8, 9 or 12 channels without the effects of intermodulation.

Versatile display
A liquid-crystal display provides a variety of information, including the levels of the reception channels, RF information and transmitter battery condition.

Space diversity reception system
The unit provides stable signal reception with minimum dropout.

Tone squelch circuit for noise elimination
A built-in squelch circuit eliminates noise and signal interference when the unit is in signal reception standby mode.

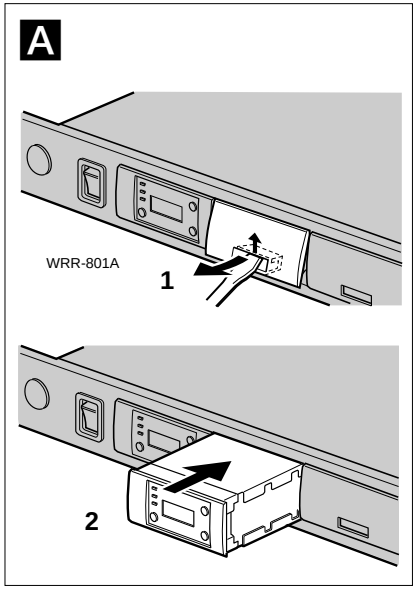
Compander system
A compander (compressor/expander) system enables stabilized wireless transmission over a wide dynamic range.

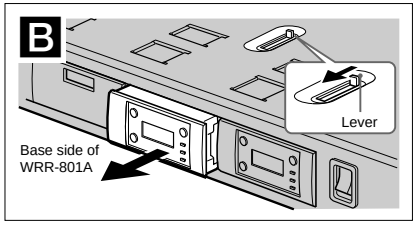
System Configuration

The unit can be used with a UHF Synthesized Wireless Microphone or UHF Synthesized Transmitter among the models listed in the table below.

Sony 800 MHz band system models

Frequency band		Model name	
TV channel	Frequency (MHz)	Transmitter or microphone	Tuner
66	792.250 to 798.500	WRT-800A (66) WRT-805A (66) WRT-810A (66) WRT-820A (66) WRT-830A (66) WRT-860A (66) WRT-867A (66)	WRR-800A (66) WRR-801A (66) WRR-810A (66) WRR-820A (66) WRR-840A (66) WRR-850A (66) WRR-860A (66)
67	799.250 to 805.500		





Error Message

Apart from the normal indications, the following error messages may appear on the display.

Message	Meaning	Measures
Err 01	An error has occurred in the backup memory data.	The memory data is initialized. Reset the group and channel settings.
Err 02	The PLL-synthesized circuit has a malfunction.	Contact your nearest Sony dealer.
NO TONE	As no tone signal is available or a tone signal other than 32.768 kHz is being received, the audio signal output is muted.	The transmitter's tone signal is in trouble. Contact your nearest Sony dealer. If you are using a WRT-810A wireless microphone, a "NO TONE" message appears when you turn off the AF switch, but this is normal.

Installing in the WRR-801A

Up to five WRU-801A units can be installed in the WRR-801A.

For information about operating this unit, refer to the Operating Instructions for the WRR-801A.

Installation (See fig. A.)

Notes
- Be sure to power off the WRR-801A before installing this unit.
- The buttons and display of this unit may be damaged if they are gripped too strongly. Always hold this unit by the side.
- Do not touch the connectors on the rear panel of this unit.
- Be careful of static electricity.

1 Power off the WRR-801A and remove the blank panel by lifting up with screwdriver or other tool.

2 Hold this unit by the side and insert into the slot. Push in until you hear a click.

Removal (See fig. B.)
On the base side of the WRR-801A, locate the lever corresponding to the slot where the unit is installed and pull the lever forward. The unit is ejected from the slot.

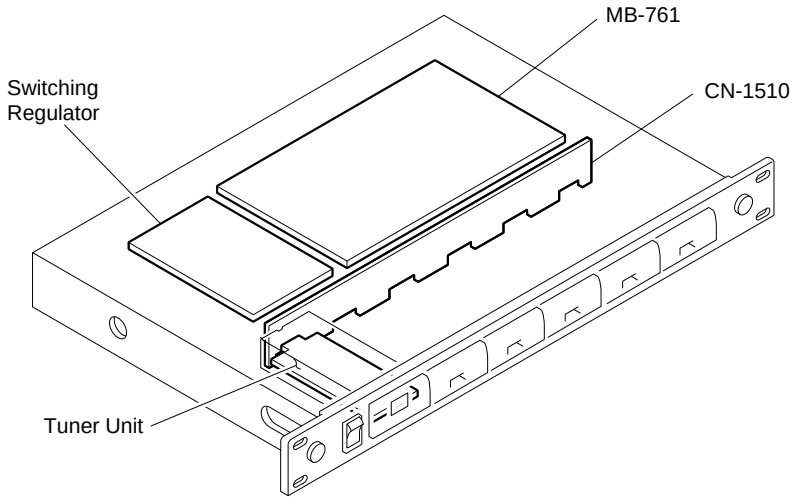
Precautions

On operation
- The unit must be used within a temperature range of 0°C to 40°C (32°F to 104°F). Avoid using the unit for extended periods at extremely high temperatures or placing it in direct sunlight, especially outdoors because this may damage the finish of the case. Never install the unit on or near a heat source, such as lighting equipment or power amplifiers.
- To avoid using in very humid or dusty places, because such use may shorten the life of the unit.
- To avoid degradation of the signal-to-noise ratio, do not use the unit in noisy places or in locations subject to noise or vibration, such as the following:
  - — near electrical equipment, such as motors, transformers or dimmers
  - — near air conditioning equipment or places subject to direct air flow from an air conditioner
  - — near public address loudspeakers
  - — where adjacent equipment might knock against the unit
- Switching lights on or off may produce electrical interference over the entire frequency range. Position the unit and the wireless microphones so that interference is minimized.
- The unit is precisely adjusted at the factory and no adjustment before use is necessary. Do not touch the inside of the unit or try to repair it by yourself.

On cleaning
Clean the unit with a dry, soft cloth. Never use thinner, benzene, alcohol or any other chemicals, since these may damage the finish.

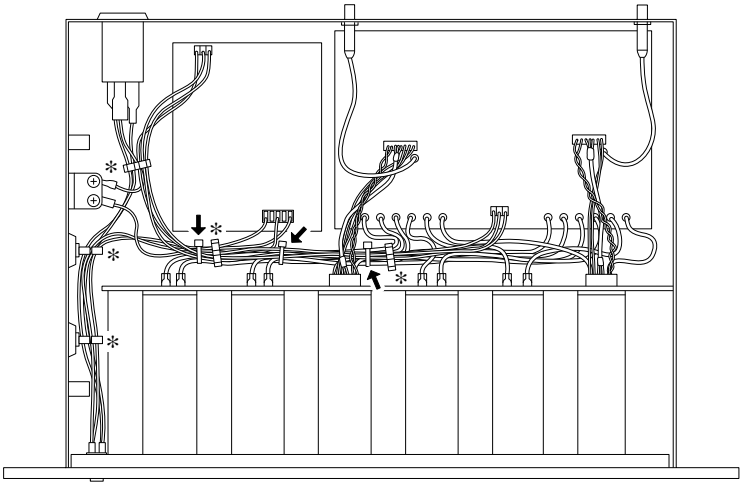
SECTION 2
SERVICE OVERVIEW

2-1. BOARDS LOCATION



2-2. PRECAUTION IN WIRING HARNESS

- The harness inside the WRR-801A are laid out so that they are not positioned close to the heat-producing parts or high voltage present parts by routing the harnesses properly or using purse locks.
  Therefore, when the boards are replaced (or parts are replaced), be sure to return the harnesses to their original locations (see the following illustration).
- When replacing a board (or when replacing a part), turn the POWER switch OFF , and unplug the power cord from the AC inlet.



Clamp (➡) : 3 pieces
Purse lock (✻) : 5 pieces

2-3. ERROR MESSAGES

The following error messages will appear if an error is detected by the built-in self diagnostics function of the WRR-801A .

Error	Comments	Countermeasure
Massage		
Error 01	Error the backup memory	Because data is initialized, perform the group setting, channel setting again. Replace the tuner unit then perform “3. Electrical Alignment” if there is an error message even when the setting had been completed again.
Error 02	PLL synthesizer circuit failed	Malfunction of tuner unit. Replace the tuner unit then perform “3. Electrical Alignment”.
NO TONE	The tone signal is present, or audio signal output is muted because the receiver received a tone signal other than 32.768 kHz signal.	Malfunction of transmitter or receiver (WRR-801A) To check the characteristics, perform “3-2-2. Overall Characteristic Confirmation.” If there are out of characteristics, tuner unit may defect. Replace the tuner unit then perform “3. Electrical Alignment.”

2-4. SERVICE FUNCTION

Set or release the following functions by operating the button on the front panel of the WRR-801A.

• Setting / Release of Muting Function

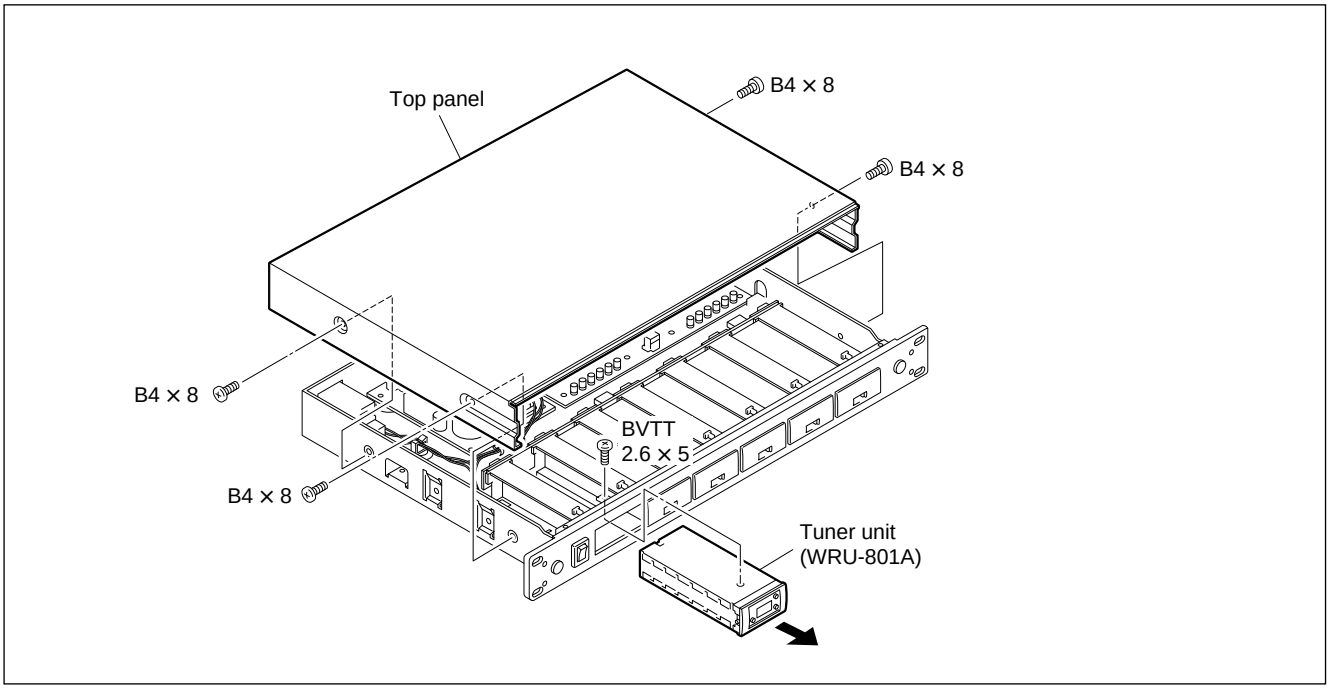
Note: The muting function can be set and released separately for tuner 1 to 6.(Tuner 2 to 6 ; when WRU-801A are installed.)

Function	Setting / Release
• Muting OFF by RF signal input level • Muting OFF by tone squelch • Muting OFF by noise squelch	Muting OFF mode setting: When pressing the “GP” and “CH” buttons, turn ON the POWER switch.
	Muting OFF mode releasing (Normal operation mode): Turn OFF the POWER switch.

Default Factory Setting : Muting OFF mode is released (Normal mode).

2-5. TUNER UNIT REMOVAL

1. Remove the four screws (B4 × 8) from the side panel, and remove the top panel.
2. Remove the screw (BVTT2.6 × 5).
3. Pull out the tuner unit in the arrow direction.



2-6. SERVICE INFORMATION OF TUNER UNIT

There are no component level service available for the WRR-801A's tuner unit assembly (compatible with WRU-801A) and tuner unit WRU-801A except the followings. Therefore, be sure to replace whole tuner unit WRU-801A when make a servicing in the component level (Refer to following "TUNER UNIT CHECKING").

Available parts for the tuner unit (WRU-801A)

Part No.	SP	Description
A-8317-231-A	s	F case assembly
A-8317-232-A	s	LCD assembly
1-783-026-11	s	Flat cable (33 wires)
2-545-180-01	s	Lid

TUNER UNIT CHECKING

The following procedures describe how to prove the tuner unit of WRR-801A (repair unit) or WRU-801A (repair unit) whether it needs to be repaired or not.

Equipment Required : WRR-801A(quality unit)

1. In case of WRR-801A

(1) Install the repair tuner unit to be examined in a quality WRR-801A.
(2) Check the fault with a quality WRR-801A.
- If there is no fault, it is considered that the tuner unit is no longer defective.
  Restore the tuner unit to its original WRR-801A (repair unit). Check all components other the than tuner unit, such as MB-761 board, CN-1510 board, harness, etc., then fix a faulty section.

- If there is a fault, tuner unit is defective.
  To fix the tuner unit, perform "3. Electrical Alignment." If it is impossible to fix the tuner unit, replace it with a new tuner unit (WRU-801A).

(3) In order to prove the whole WRR-801A, change the tuner unit of the repairing WRR-801A with tuner unit of WRR-801A(quality unit).
(4) Check the fault of repairing WRR-801A.
- If there is no fault found on the repairing WRR-801A, tuner unit is defective.

- If there is a fault, it is considered that both the tuner unit and other components, such as MB-761 board, CN-1510 board, harness, etc., are defective. Check all components then fix a faulty section.

2. In case of WRU-801A

(1) Install the repair tuner unit (WRU-801A) to be examined in a quality WRR-801A.
(2) Check the fault with a quality WRR-801A.
- If there is a fault, tuner unit WRU-801A (repair unit) is defective.
  To fix the tuner unit, perform "3. Electrical Alignment." If it is impossible to fix the tuner unit, replace it with a new tuner unit (WRU-801A).

- If there is no fault found on the WRR-801A, repairing tuner unit WRU-801A is no longer defective. Thus the repairing WRR-801A, other than tuner unit, is defective.

SECTION 3
ELECTRICAL ALIGNMENT

3-1. PREPARATION

3-1-1. Equipment and Tools

Equipment

Name	Specifications		Model name
Signal generator	Frequency:	100 kHz to 990 MHz	HEWLETT PACKARD 8656B or equivalent
Spectrum analyzer	Frequency:	10 kHz to 5 GHz	ADVANTEST TR4173 or equivalent
DC volt meter (Multi Meter)	Effective digits:	3 1/2 digits	—
Audio analyzer	Frequency:	10 Hz to 100 kHz	HEWLETT PACKARD 8903B equivalent
RF millivolt meter	Frequency:	10 kHz to 1000 MHz	MEGURO MV-19B, C (with 50 Ω termination prove chip MP-3109) or equivalent
Level meter	Frequency:	20 Hz to 100 kHz	—
Noise meter	Frequency: Filter (included):	10 Hz to 500 kHz A weighted filter	MEGURO MN-445B or equivalent
Tracking generator	Frequency:	100 kHz to 2 GHz	ADVANTEST TR4153A or equivalent
Function generator	32.768 kHz (and 32.782 kHz) ±1 Hz signal (sine wave) can be generated.		HEWLETT PACKARD 8904A or equivalent
Mic amp	Gain:	0 dB to 70 dB (with A weighted filter)	—
Oscilloscope	Frequency:	DC to 30 MHz	—

Tools

Name	Part No.	Remarks
Adjuster (0.4 × 1.3 mm)	7-721-052-81	For adjustment
DC cut fixture	—	Refer to “How to make DC cut fixture”
91 Ω metal film resistor	1-214-609-00	

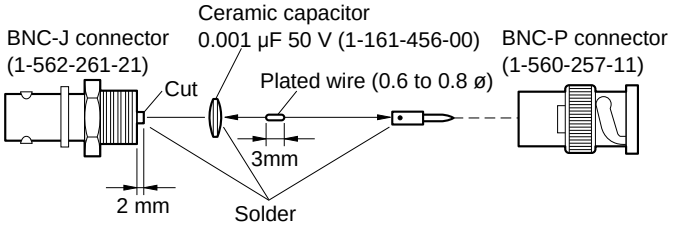
How to make DC cut fixture

Required parts

BNC-J connector; 1 (Part No. 1-562-261-21)

BNC-P connector; 1 (Part No. 1-560-257-11)

Ceramic capacitor 0.001 µF; 1 (Part No. 1-161-456-00)



3-2. ADJUSTMENTS

This section describes the following adjustments (and checks) required to satisfy the specifications.

Adjustment Item

3-2-1. Tuner Unit (WRU-801A) Adjustment
1. Muting level and RF level adjustment
2. Output level adjustment
3. Noise squelch adjustment

3-2-2. Overall Characteristic Check
1. Output level check
2. S/N check
3. Frequency characteristic check
4. Distortion ratio check
5. RF level indicator/RF indicator check
6. AF level indicator/AF indicator check
7. Muting level check
8. BATT indicator check
9. Tone squelch check
10. DC +9 V OUT voltage check

Note

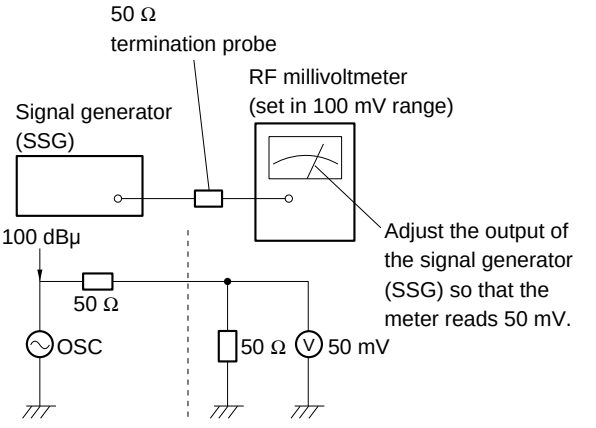
0 dBμV_{EMF} = −113 dBm
(EMF = Electromotive force)
0 dBm = 1 mW at 50 Ω loaded

Note on Adjustment

The RF level of the input signal (the output level of the signal generator) for adjustment is expressed as an open ended voltage in unit dBμ (0 dBμ = 1 μV).
The adjustment is to be performed by calibrating the output level of the signal generator
as shown below.

Calibration method

(1) Connect the RF millivoltmeter to the signal generator as shown in the figure below.
(2) Adjust the level of the output signal from the signal generator (SSG) so that the RF millivoltmeter reads 50 mV. The level of the output signal from the signal generator (SSG) when RF millivoltmeter reads 50 mV shall be specified as 100 dBμ (at no load).



3-2-1. Tuner unit (WRU-801A) Adjustment

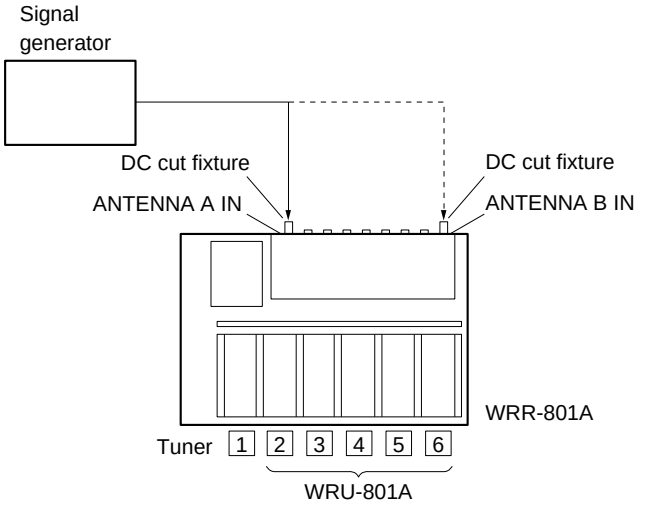
1. Muting level and RF level adjustment

Perform this adjustment when Muting levels deviate from the specification.
This adjustment is performed automatically by the learning function of the WRR-801A RSSI learning.

Equipment and Tools

Signal generator
DC cut fixture (See "How to make DC cut fixture" on page 3-1.)

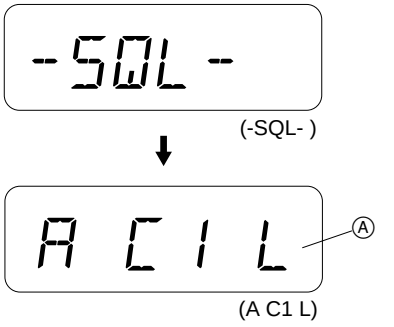
Connection



Procedure

Step 1: Preparation
Set the signal generator as follows:
Signal generator setting
FREQUENCY (Carrier frequency): 795.000 MHz
RF OUTPUT (Output level): 35 dBμV$_{EMF}$
(= −78 dBm)
MODULATION (Modulation frequency):
OFF (No modulation)

Step 2: Tuner [1] (Tune unit 1) adjustment
(1) Connect the signal generator to the ANTENNA A IN connector with DC cut fixture.
(2) Turn OFF the WRR-801A POWER switch.
(3) Set the RF OUTPUT (output level) of the signal generator to the OFF.
(4) While pressing the "SET" button on the front panel (Tuner [1]), turn on the WRR-801A POWER switch.
(5) Indication on LCD (Tuner [1]) appears as follows:
LCD:

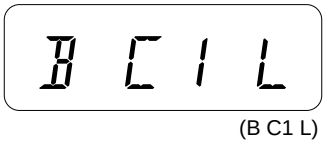


(6) Set the RF OUTPUT (output level) of the signal generator to the ON.
(7) Check first that indication "L" of "AC1L" on the LCD (Tuner [1]) has disappeared, and then press the "SET" button on the front panel (Tuner [1]).

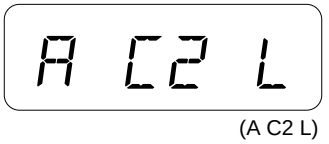
Note

If the "L" indication does not disappear from the LCD (on Ⓐ area: refer to the previous procedure (5) (when the RF input level is lower than the reference level) or "H" is displayed (when the RF input level is higher than the reference level), perform the following adjustment.
① Check the RF output level and frequency of the signal generator (perform re-setting if necessary), and repeat from procedure (1).
② If the above conditions (the "L" indication does not disappear, or "H" is displayed) remain even after re-adjustment, it is necessary to replace the new tuner unit (WRU-801A).

(8) Indication on LCD (Tuner [1]) appears as follows:
LCD:



(9) Connect the signal generator to the ANTENNA B IN connector with DC cut fixture.
(10) Check first that indication "L" of "BC1L" on the LCD has disappeared, and then press the "SET" button on the front panel (Tuner [1]).
(11) Indication on the LCD (Tuner [1]) appears as follows:
LCD:



(12)Connect the signal generator to the ANTENNA A connector with DC cut fixture. Set the FREQUENCY (carrier frequency) of the signal generator as follow.
EQUENCY (carrier frequency); 799.000 MHz
(13)Check first that indication “L” of “AC2L” on the LCD (Tuner [1]) has disappeared, and then press the “SET” button on the front panel (Tuner [1]).
(14)Indication on the LCD (Tuner [1]) appears as follows:
LCD:

(B C2 L)

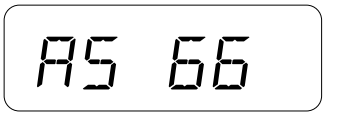
(15)Connect the signal generator to the ANTENNA B IN connector with DC cut fixture.
(16)Check first that indication “L” of “BC2L” on the LCD (Tuner [1]) has disappeared, and then press the “SET” button on the front panel (Tuner [1]).
(17)Indication on the LCD (Tuner [1]) appears as follows:
LCD:

(A C3 L)

(18)Connect the signal generator to the ANTENNA A IN connector with DC cut fixture. Set the FREQUENCY (carrier frequency) of the signal generator as follow.
EQUENCY (carrier frequency); 804.000 MHz
(19)Check first that indication “L” of “AC3L” on the LCD (Tuner [1]) has disappeared, and then press the “SET” button on the front panel (Tuner [1]).
(20)Indication on the LCD (Tuner [1]) appears as follows:
LCD:

(B C3 L)

(21)Connect the signal generator to the ANTENNA B IN connector with DC cut fixture.
(22)Check first that indication “L” of “BC3L” on the LCD (Tuner [1]) has disappeared, and then press the “SET” button on the front panel (Tuner [1]).
(23)Indication on the LCD (Tuner [1]) appears as follows:
LCD:



(AS66)

Adjustment is completed. (Normal operation mode)

Step 3: Tuner [2] to Tuner [6] adjustment
When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from procedures (1) to (23) of “Step 2. Tuner [1] (Tuner unit 1) Adjustment” on the respective tuner units that are installed in the WRR-801A.
When performing the above described adjustments change the following details as shown below, of the “Step 2. Tuner [1] (Tuner unit 1) Adjustment.”

Tuner [1] → Tuner [2], [3], [4], [5], and [6]
Tuner unit 1 → Tuner unit 2, 3, 4, 5, and 6

2. Output level adjustment

Perform this adjustment when the TUNER OUTPUT levels deviate from the specification.

Preparation

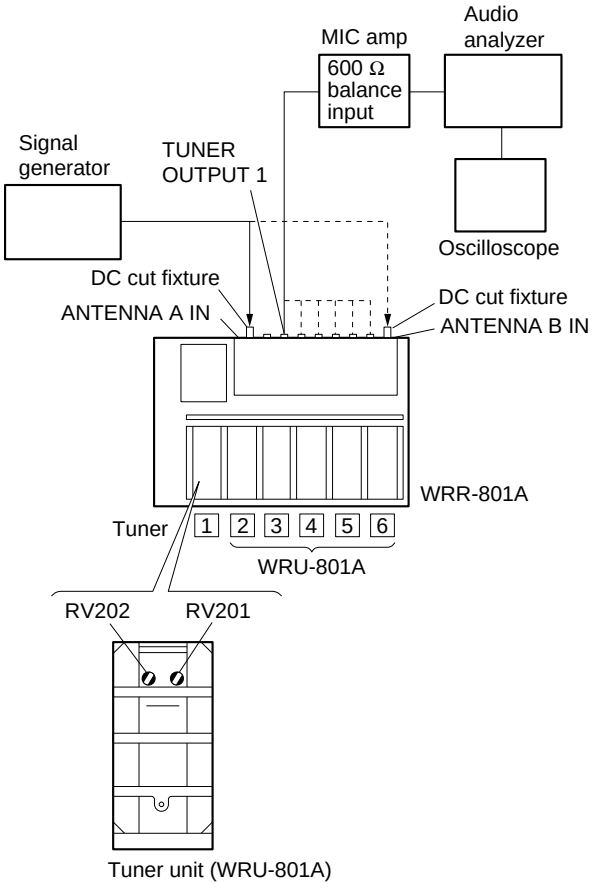
Before the adjustments, turn off the POWER switch of the WRR-801A, and perform the followings.

1. Remove the case cover of the WRR-801A.
2. Remove the tuner unit form the WRR-801A.
3. Remove the upper side case lid of the tuner unit, and insert the tuner unit to the slot of the WRR-801A.

Equipment and Tools

- Audio analyzer (level meter, distortion meter)
- Mic amp (Noise meter)
- Oscilloscope
- Adjuster (0.4 × 1.3 mm): (Part No. 7-221-652-81)
- DC cut fixture (See the "How to make DC cut fixture" on page 3-1.)

Connection/Adjustment Location



Switch and Control Setting

Front panel (Tuner 1)

Channel setting: Group 00, 6701 channel (799.250 MHz)

Muting: OFF

Rear panel

ATT (ANTENNA A, B) switch: 0 dB

Procedure

Step 1: Preparation

Set the signal generator as follows:

Signal generator setting

FREQUENCY (Carrier frequency): 799.250 MHz

RF OUTPUT (Output level): 60 dBμVEMF (= −53 dBm)

MODULATION (Modulation frequency): 1 kHz

DEVIATION (Frequency deviation): ±5 kHz

Step 2: Tuner 1 (Tuner unit 1) adjustment

(1) Connect the audio analyzer to the TUNER OUTPUT 1 connector via MIC amp.

(2) Connect the signal generator to the ANTENNA A IN connector with DC cut fixture.

(3) Adjustment (ANTENNA A IN side adjustment)

Specification: Output level (level meter indication level) = −20 dBm ± 0.5 dB (at 600 Ω loaded)

Adjustment: ⊘RV202/RF board (Tuner unit 1)

(4) Connect the signal generator to the ANTENNA B IN connector with DC cut fixture.

(5) Adjustment (ANTENNA B IN side adjustment)

Specification: Output level (level meter indication level) = −20 dBm ± 0.5 dB (at 600 Ω loaded)

Adjustment: ⊘RV201/RF board (Tuner unit 1)

Note

The output level difference between the ANTENNA A side and the ANTENNA B side should be within 0.3 dB.

Step 3: Tuner [2] to [6] adjustment

When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from procedures (1) to (5) of "Step 2. Tuner [1] (Tuner unit 1) adjustment" on the respective tuner units that are installed in the WRR-801A.

When performing the above described adjustments change the following details as shown below of the "Step 2. Tuner [1] (Tuner unit 1) adjustment."

Tuner [1] adjustment → Tuner [2], [3], [4], [5], or [6] adjustment

Measurement:

TUNER OUTPUT 1 → TUNER OUTPUT 2, 3, 4, 5, or 6

Adjustment:

Tuner unit 1 → Tuner unit 2, 3, 4, 5, or 6

Step 4:

After completing adjustment, turn off the WRR-801 A power switch and perform the followings.

(1) Remove the tuner unit from the WRR-801A.

(2) Attach the upper side case lid to the tuner unit, and insert the tuner unit to the slot of the WRR-801A.

3. Noise squelch adjustment

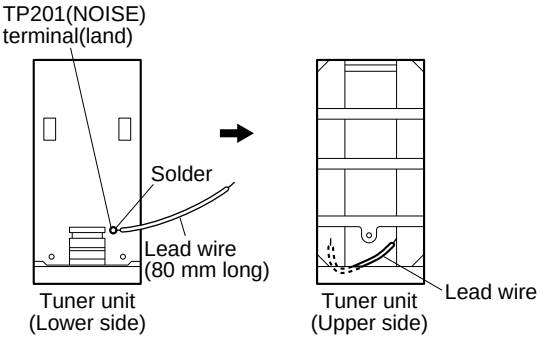
Equipment and Tools

- Signal generator
- Audio analyzer (level meter, distortion meter)
- Mic amp (Noise meter)
- Oscilloscope
- Adjuster(0.4 × 1.3 mm) : (Part No. 7-221-652-81)
- DC cut fixture (See the "How to make DC cut fixture" on page 3-1.)

Preparation

Before the adjustments, turn off the POWER switch of the WRR-801A, and perform the followings.

1. Remove the case cover of the WRR-801A.
2. Remove the tuner unit from the WRR-801A.
3. Remove the upper and lower side case lids of the tuner unit.
4. Solder a wire (80 mm long) to the TP201(NOISE) terminal(land) , and take out the free side of the wire(80 mm long) to the upper side of the tuner unit as shown below.



5. Attach the lower side case lid to the tuner unit, and insert the tuner unit to the slot of the WRR-801A.

Connection

Same as " 2. Output level adjustment ".

Switch and Control Setting

Front panel (Tuner [1])

Channel setting: Group 00, 6701 channel (799.250 MHz)

Muting: OFF

Rear panel

ATT(ANTENNA A, B) switch: 0 dB

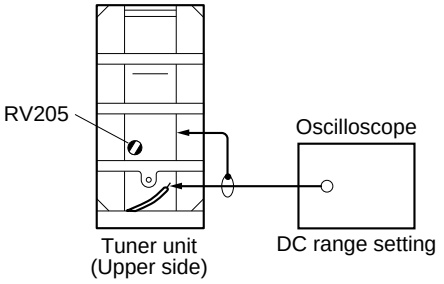
Procedure

Step 1: Tuner [1] (Tuner unit 1) adjustment

(1) S/N check
Perform the " 2. S/N Check " of Section 3-2-2. Overall Characteristics Check.
When checking the S/N at 15 dBμVEMF (= −98 dBm), note the ANNTENA A or B IN connector which shows the better S/N.

(2) Connect the signal generator to the ANTENNA A (or B) IN connector which showed the better S/N at the input of 15 dBμVEMF (= −98 dBm) under "(1) S/N check".

(3) Connect the oscilloscope to the wire (TP201 terminal) as shown below.



(4) Set the signal generator as follows;
Signal generator setting
FREQUENCY (Carrier frequency): 799.250 MHz
RF OUTPUT (Output level): 15 dBμVEMF
(= −98 dBm)
MODULATION (Moduation frequency): 1 kHz
DEVIATION (Frequency deviation): ±5 kHz

(5) Adjust the RF OUTPUT (Output level) of the signal generator so that Signal to Noise ratio is 20 dB ±5 dB (S/N; 20 dB ±5 dB) under the " (1) S/N check ".

(6) Turn ⊘RV205 (tuner unit) slowly counterclockwise to be the DC voltage of the TP201(NOISE) terminal (land) change "L" (about 0 V).

(7) Adjustment

Specification: DC voltage of the TP201 (NOISE) terminal (land) change from "L"(about 0 V) to "H"(about 4.8 V) level.

Adjustment: ⊘RV205/RF board (tuner unit 1)
Turn ⊘RV205 slowly clockwise for adjustment.

Step 2: Tuner [2] to [6] adjustment

When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from the procedure (1) to (6) of " Step 1: Tuner [1] (Tuner unit 1) adjustment" on the respective tuner unit that are installed in the WRR-801A.
When performing the above described adjustment change the following details as shown below of the "Step 1: Tuner [1] (Tuner unit 1) adjustment".
Tune [1] → Tuner [2], [3], [4], [5], or [6]

Step 3:

After completing adjustment, turn off the WRR-801A power switch and perform the followings.

(1) Remove the tuner unit from the WRR-801A.

(2) Remove the lower side case lid from the tuner unit, and unsolder the wire (80 mm long) from the TP201 (NOISE) terminal (land).

(3) Attach the upper and lower side case lids to the tuner unit, and insert the tuner unit to the slot of the WRR-801A.

3-2-2. Overall Characteristics Check

Perform the overall characteristics check according to the following procedure.

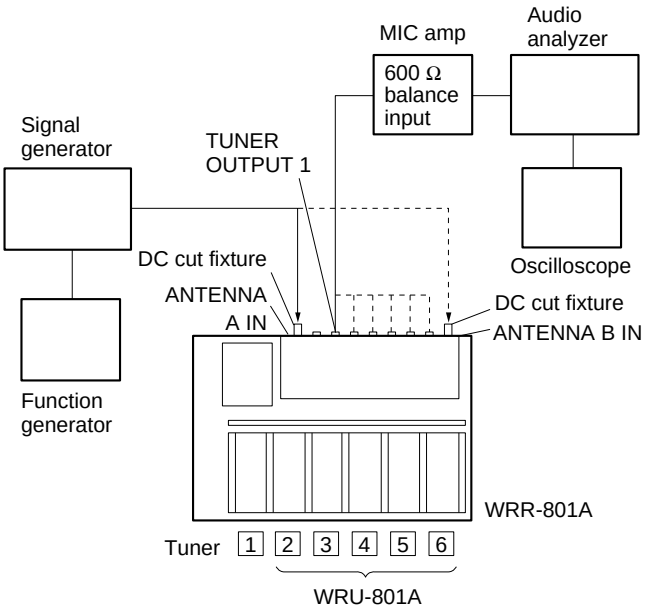
Procedure

1. Output level check
   ↓
2. S/N check
   ↓
3. Frequency characteristic check
   ↓
4. Distortion check
   ↓
5. RF Level indicator/RF indicator check
   ↓
6. AF Level indicator/AF indicator check
   ↓
7. Muting level check
   ↓
8. BATT indicator check
   ↓
9. Tone squelch check
   ↓
10. DC + 9 V OUT voltage check

Equipment and Tools

- Signal generator
- Audio analyzer
- Mic amp (Noise mete) with A-weighted filter
- Function generator
- Oscilloscope
- DC current meter
- DC cut fixture (See “How to make DC cut fixture” on page 3-1.)

Connection



1. Output level check

Procedure

Step 1: Tuner [1] (Tuner unit 1) checking

(1) Set the WRR-801A as follows;
Front panel (Tuner [1])
Channel setting: Group 00, 6701 channel (799.250 MHz)
Muting: OFF
Rear panel
ATT (ANTENNA A, B IN) switch: 0 dB

(2) Connect the audio analyzer to the TUNER OUTPUT 1 connector via MIC amp.

(3) Connect the signal generator to the ANTENNA A IN connector with DC cut fixture.

(4) Set the signal generator as follows:
Signal generator setting
FREQUENCY (Carrier frequency): 799.250 MHz
RF OUTPUT (Output level): 60 dBμVEMF (= −53 dBm)
MODULATION (Modulation frequency): 1 kHz
DEVIATION (Frequency deviation): ±5 kHz

(5) Check that the TUNER OUTPUT 1 connector output level is −20 dBm ± 2 dB (at 600 Ω loaded).

(6) Connect the audio analyzer to the MIX OUTPUT connector via MIC amp.

(7) Set the MIX OUTPUT LEVEL switch (rear panel) is 0 dBm (LINE).

(8) Check that the MIX OUTPUT connector output level is −20 dBm ± 2 dB (at 600 Ω loaded).

(9) Set the MIX OUTPUT LEVEL switch is −38 dBm (MIC).

(10) Check that the MIX OUTPUT connector output level is −58 dBm ± 2 dB (at 600 Ω loaded).

(11) Connect the signal generator to the ANTENNA B IN connector, and perform the procedures (4) to (10) above.

Step 2: Tuner [2] to [6] checking

When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from procedures (1) to (11) of "Step 1. Tuner [1] (Tuner unit 1) checking" on the respective tuner units that are installed in the WRR-801A.

When performing the above described checking change the following details as shown below, of the "Step 1. Tuner [1] (Tuner unit 1) checking".

Tuner [1] → Tuner [2], [3], [4], [5], and [6]
TUNER OUTPUT 1 → TUNER OUTPUT 2, 3, 4, 5, and 6

2. S/N Check

Procedure

Step 1: Tuner [1] (Tuner unit 1) checking

(1) Set the WRR-801A as follows;
Front panel (Tuner [1])
Channel setting: Group 00, 6701 channel (799.250 MHz)
Muting: OFF
Rear panel
ATT (ANTENNA A, B IN) switch: 0 dB

(2) Connect the audio analyzer to the TUNER OUTPUT 1 connector via MIC amp.

(3) Connect the signal generator to the ANTENNA A IN connector with DC cut fixture.

(4) Set the signal generator as follows:
Signal generator setting
FREQUENCY (Carrier frequency): 799.250 MHz
RF OUTPUT (Output level): 60 dBμVEMF (= −53 dBm)
MODULATION (Modulation frequency): 1 kHz
DEVIATION (Frequency deviation): ±5 kHz

(5) Read the output level of the TUNER OUTPUT 1 connector (Audio analyzer indication level). This level is specified to be 0 dB.

(6) Turn OFF the MODULATION (modulation frequency) of the signal generator (No modulation).

(7) Check that output level of the TUNER OUTPUT 1 is −62 dB or less (S/N is 62 dB or more with A-weighted filter) as compared with the level of procedure (4) above.

(8) Change the RF OUTPUT (output level) of the signal generator as shown below.
RF OUTPUT (output level): 20 dBμVEMF (= −93 dBm)

(9) Check that output level of the TUNER OUTPUT 1 is −40 dB or less (S/N is 40 dB or more with A-weighted filter) as compared with the level of procedure (5) above.

(10) Change the RF OUTPUT (output level) of the signal generator as shown below.
RF OUTPUT (output level): 60 dBμVEMF (= −53 dBm)

(11) Set the audio analyzer to the distortion mode.

(12) Check that distortion ratio is −43 dB or less (0.7 % or less) with A-weighted.

(13) Connect the signal generator to the ANTENNA B IN connector with DC cut fixture.

(14) Perform the procedures (4) through (12) above.

(15) Set the channel and FREQUENCY (carrier frequency) of the signal generator as shown ① and ② below. Perform the procedures (1) to (14) above, for each channel setting (① and ②).
① Channel setting (Tuner [1]): Group 00, 6601 channel (792.250 MHz)
Signal generator setting:
FREQUENCY (Carrier frequency); 792.250 MHz
② Channel setting (Tuner [1]): Group 00, 6751 channel (805.500 MHz)
Signal generator setting:
FREQUENCY (Carrier frequency); 805.500 MHz

Step 2: Tuner [2] to [6] checking

When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from procedures (1) to (15) of "Step 1. Tuner [1] (Tuner unit 1) checking" on the respective tuner units that are installed in the WRR-801A.

When performing the above described checking change the following details as shown below, of the "Step 1. Tuner [1] (Tuner unit 1) checking".

Tuner [1] → Tuner [2], [3], [4], [5], and [6]
TUNER OUTPUT 1 → TUNER OUTPUT 2, 3, 4, 5, and 6

3. Frequency characteristic check

Procedure

Step 1: Tuner [1] (Tuner unit 1) checking

(1) Set the WRR-801A as follows;
Front panel (Tuner [1])
Channel setting: Group 00, 6701 channel (799.250 MHz)
Muting: OFF
Rear panel
ATT (ANTENNA A, B) switch: 0 dB

(2) Connect the audio analyzer to the TUNER OUTPUT 1 connector via MIC amp.

(3) Connect the signal generator to the ANTENNA A IN connector with DC cut fixture.

(4) Set the signal generator as follows:
Signal generator setting
FREQUENCY (Carrier frequency): 799.250 MHz
RF OUTPUT (Output level): 60 dBμVEMF (= −53 dBm)
MODULATION (Modulation frequency): 1 kHz
DEVIATION (Frequency deviation): ±12 kHz

(5) Read the output level of the TUNER OUTPUT 1 (indication of the audio analyzer).
This level is specified to be 0 dB.

(6) Change the MODULATION (modulation frequency) of the signal generator as follows, and check the output level with respect to the output level under the procedure (3) is set also as follows.
Note
100 Hz, 10 kHz and 15 kHz modulation frequency must be set by using the function generator.

MODULATION frequency of signal generator	TUNER OUTPUT 1 connector output level
100 Hz	0 ±2.0 dB
10 kHz	−20 ±2.0 dB
15 kHz	−28 ±2.5 dB

(7) Connect the signal generator to the ANTENNA B IN connector with DC cut fixture, and perform the procedures (4), (5) and (6).

Step 2: Tuner [2] to Tuner [6] checking
When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from procedures (1) to (7) of "Step 1. Tuner [1] (Tuner unit 1) checking" on the respective tuner units that are installed in the WRR-801A.
When performing the above described checking change the following details as shown below, of the "Step 1. Tuner [1] (Tuner unit 1) checking".

Tuner [1] → Tuner [2], [3], [4], [5], and [6]
TUNER OUTPUT 1 → TUNER OUTPUT 2, 3, 4, 5, and 6

4. Distortion ratio check

Procedure

Step 1: Tuner [1] (Tuner unit 1) checking

(1) Set the WRR-801A as follows;
Front panel (Tuner [1])
Channel setting: Group 00, 6701 channel (799.250 MHz)
Muting: OFF
Rear panel
ATT (ANTENNA A, B) switch: 0 dB

(2) Connect the audio analyzer to the TUNER OUTPUT 1 connector via MIC amp.

(3) Connect the signal generator to the ANTENNA A IN connector with DC cut fixture.

(4) Set the signal generator as follows:
Signal generator setting
FREQUENCY (Carrier frequency): 799.250 MHz
RF OUTPUT (Output level): 60 dBμVEMF (= −53 dBm)
MODULATION (Modulation frequency): 1 kHz
DEVIATION (Frequency deviation): ±40 kHz

(5) Set the audio analyzer to the distortion mode, and check that the distortion ratio is less than 0.8 %.

(6) Change the MODULATION (modulation frequency) of the signal generator as shown below.
MODULATION (modulation frequency): 10 kHz
(Note; 10 kHz modulation frequency must be set by using the function generator.)
Check that the distortion ratio is less than 3 %.

(7) Connect the signal generator to the ANTENNA B IN connector with DC cut fixture, and perform the procedures (4) through (6) above.
(8) Set the channel setting (Tuner [1]) and FREQUENCY (carrier frequency) of the signal generator as shown ① and ② below.
Perform the procedures (1) to (7) above, for each channel setting (① and ②).
① Channel setting (Tuner [1]):
Group 00, 6601 channel
(792.250 MHz)
Signal generator setting:
FREQUENCY (carrier frequency); 792.250 MHz
② Channel setting (Tuner [1]):
Group 00, 6751 channel
(805.500 MHz)
Signal generator setting:
FREQUENCY (carrier frequency); 805.500 MHz

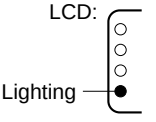
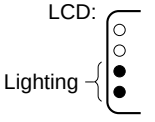
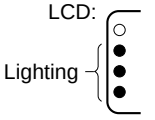
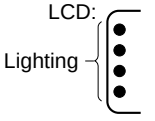
Step 2: Tuner [2] to Tuner [6] checking
When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from procedures (1) to (7) of "Step 1. Tuner [1] (Tuner unit 1) checking" on the respective tuner units that are installed in the WRR-801A.
When performing the above described checking change the following details as shown below, of the "Step 1. Tuner [1] (Tuner unit 1) checking".

Tuner [1] → Tuner [2], [3], [4], [5], and [6]
TUNER OUTPUT 1 → TUNER OUTPUT 2, 3, 4, 5, and 6

5. RF level indicator/RF indicator check

Procedure

Step 1: Tuner [1] (Tuner unit 1) checking
(1) Set the WRR-801A as follows;
Front panel (Tuner [1])
Channel setting: Group 00, 6701 channel
(799.250 MHz)
Muting: OFF
Rear panel
ATT (ANTENNA A, B) switch: 0 dB
(2) Connect the signal generator to the ANTENNA A IN connector with DC cut fixture.
(3) Set the signal generator as follows:
Signal generator setting
FREQUENCY (Carrier frequency): 799.250 MHz
RF OUTPUT (Output level): 0 dBμVEMF
(= −113 dBm)
MODULATION (Modulation frequency): 1 kHz
DEVIATION (Frequency deviation): ±5 kHz
(4) Increase gradually the output level from the signal generator, and check that the output level of the signal generator is as follows when the RF input level indicator (Tuner [1]) lights.

RF level indicator (green) lights in of Tuner [1]	Signal generator output level
	25 dBμVEMF ±5 dB
	35 dBμVEMF ±5 dB
	45 dBμVEMF ±5 dB
	55 dBμVEMF ±5 dB

(5) Connect the signal generator to the ANTENNA B IN connector with DC cut fixture, and perform the procedures (3) and (4) above.
(6) Set the channel setting (Tuner [1]) and FREQUENCY (carrier frequency) of the signal generator as shown ① and ② below.
Perform the procedures (1) through (5) above, for each channel setting (① and ②).
① Channel setting (Tuner [1]):
Group 00, 6601 channel (792.250 MHz)
Signal generator setting:
FREQUENCY (carrier frequency); 792.250 MHz
② Channel setting (Tuner [1]):
Group 00, 6751 channel (805.500 MHz)
Signal generator setting:
FREQUENCY (carrier frequency); 805.500 MHz

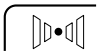
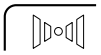
Step 2: Tuner [2] to Tuner [6] checking
When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from procedures (1) to (6) of "Step 1. Tuner [1] (Tuner unit 1) checking" on the respective tuner units that are installed in the WRR-801A.
When performing the above described checking change the following details as shown below, of the "Step 1. Tuner [1] (Tuner unit 1) checking".

Tuner [1] → Tuner [2], [3], [4], [5], and [6]

6. AF level indicator/AF indicator check

Procedure

Step 1: Tuner [1] (Tuner unit 1) checking
(1) Set the WRR-801A as follows;
Front panel (Tuner [1])
Channel setting: Group 00, 6701 channel (799.250 MHz)
Muting: OFF
Rear panel
ATT (ANTENNA A, B) switch: 0 dB
(2) Connect the signal generator to the ANTENNA A IN connector with DC fixture.
(3) Set the signal generator as follows:
Signal generator setting
FREQUENCY (Carrier frequency): 799.250 MHz
RF OUTPUT (Output level): 60 dBμVEMF (= −53 dBm)
MODULATION (Modulation frequency): 1 kHz
(4) Increase gradually DEVIATION (frequency deviation) of the signal generator starting from ±3 kHz, and check that the deviation of the signal generator is ±(5.0 ±1.2) kHz with the AF indicator as follows.

DEVIATION setting on signal generator	AF indicator of Tuner [1]
±(5.0 ±1.2) kHz	AF level indicator (LCD); Blinking LCD: 
	AF indicator (LED); Lights in AF
Less than ±(5.0 ±1.2) kHz	AF level indicator (LCD); Goes out LCD: 
	AF indicator (LED); Goes out AF

(5) Connect the signal generator to the ANTENNA B IN connector with DC cut fixture, and perform the procedures (3) and (4) above.

Step 2: Tuner [2] to Tuner [6] checking
When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from procedures (1) to (4) of "Step 1. Tuner [1] (Tuner unit 1) checking" on the respective tuner units that are installed in the WRR-801A.
When performing the above described checking change the following details as shown below, of the "Step 1. Tuner [1] (Tuner unit 1) checking".

Tuner [1] → Tuner [2], [3], [4], [5], and [6]

7. Muting level check

Procedure

Step 1: Tuner [1] (Tuner unit 1) checking

(1) Set the WRR-801A as follows;
Front panel (Tuner [1])
Channel setting: Group 00, 6701 channel (799.250 MHz)
Muting: ON (Normal mode)
Rear panel
ATT (ANTENNA A, B) switch: 0 dB

(2) Connect the signal generator to the ANTENNA A IN connector with DC cut fixture.

(3) Set the signal generator as follows:
Signal generator setting
FREQUENCY (Carrier frequency): 799.250 MHz
RF OUTPUT (Output level): 60 dBμVEMF (= −53 dBm)
MODULATION (Modulation frequency): 1 kHz
DEVIATION (Frequency deviation): ±5 kHz

(4) Check that RF Indicator LED lights (green) and "NO TONE" message appears on LCD (Tuner [1]).

(5) Change the RF OUTPUT (output level) of the signal generator as shown below.
RF OUTPUT (output level): 20 dBμVEMF (= −93 dBm)

(6) Check that RF Indicator LED goes off (green) and "NO TONE" message disappears on LCD (Tuner [1]).

(7) Increase gradually the RF OUTPUT (output level) of the signal generator. Check that RF OUTPUT (output level) is 25 dBμVEMF ±5 dB at when RF Indicator lights (green LED) and "NO TONE" message appears on LCD (Tuner [1]).

(8) Connect the signal generator to the ANTENNA B IN connector with DC cut fixture, and perform the procedures (3) through (7) above.

(9) Set the channel setting (Tuner [1]) and FREQUENCY (carrier frequency) of the signal generator as shown ① and ② below.
Perform the procedures (1) to (8) above, for each channel setting (① and ②).
① Channel setting (Tuner [1]):
Group 00, 6601 channel (792.250 MHz)
Signal generator setting:
FREQUENCY (carrier frequency); 792.250 MHz
② Channel setting (Tuner [1]):
Group 00, 6751 channel (805.500 MHz)
Signal generator setting:
FREQUENCY (carrier frequency); 805.500 MHz

Step 2: Tuner [2] to Tuner [6] checking

When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from procedures (1) to (4) of "Step 1. Tuner [1] (Tuner unit 1) checking" on the respective tuner units that are installed in the WRR-801A.

When performing the above described checking change the following details as shown below, of the "Step 1. Tuner [1] (Tuner unit 1) checking".

Tuner [1] → Tuner [2], [3], [4], [5], and [6]

8. BATT (Battery) indicator check

Procedure

Step 1: Tuner [1] (Tuner unit 1) checking

(1) Set the WRR-801A as follows;
Front panel (Tuner [1])
Channel setting: Group 00, 6701 channel (799.250 MHz)
Muting: ON (Normal mode)
Rear panel
ATT (ANTENNA A, B) switch: 0 dB

(2) Connect the signal generator to the ANTENNA A IN connector with DC cut fixture.

(3) Set the signal generator as follows:
Signal generator setting
FREQUENCY (Carrier frequency): 799.250 MHz
RF OUTPUT (Output level): 60 dBμVEMF (= −53 dBm)
MODULATION (Modulation frequency): 32.782 kHz (32.782 kHz must be set by connecting Function generator)
DEVIATION (Frequency deviation): ±2.1 kHz

(4) Turn on and off the MODULATION (modulation frequency) of the signal generator as follows, and check that BATT Indicator (Tuner [1]) change also as follows:

MODULATION setting of signal generator	BATT indicator of Tuner [1]	
ON	BATT indicator (LCD); Turn the signal generator on and BATT indicator starts blinking after 3 seconds.	LCD:
	BATT indicator (LED); Turn the signal generator on and BATT indicator starts blinking after 3 seconds.	BATT
OFF	BATT indicator (LCD); Blinking is stop.	LCD:
	BATT indicator (LED); Goes out	BATT

(5) Connect the signal generator to the ANTENNA B IN connector with DC cut fixture, and perform the procedures (3) and (4) above.

Step 2: Tuner [2] to Tuner [6] checking

When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from procedures (1) to (4) of "Step 1. Tuner [1] (Tuner unit 1) checking" on the respective tuner units that are installed in the WRR-801A.

When performing the above described checking change the following details as shown below, of the "Step 1. Tuner [1] (Tuner unit 1) checking".

Tuner [1] → Tuner [2], [3], [4], [5], and [6]

9. Tone squelch check

Procedure

Step 1: Tuner [1] (Tuner unit 1) checking

(1) Set the WRR-801A as follows;
Front panel (Tuner [1])
Channel setting: Group 00, 6701 channel (799.250 MHz)
Muting: ON (Normal mode)
Rear panel
ATT (ANTENNA A, B) switch: 0 dB

(2) Connect the signal generator to the ANTENNA A IN connector with DC cut fixture.

(3) Set the signal generator as follows:
Signal generator setting
FREQUENCY (Carrier frequency): 799.250 MHz
RF OUTPUT (Output level): 60 dBμVEMF (= −53 dBm)
MODULATION (Modulation frequency): 32.768 kHz (32.768 kHz must be set by connecting Function generator)
DEVIATION (Frequency deviation): ±1.4 kHz

(4) Turn on and off the MODULATION (modulation frequency) of the signal generator as follows, and the LCD indicator (Tuner [1]) changes also as follows.

MODULATION ON/OFF on signal generator	LCD indication of Tuner [1]
ON	GP/CH indication (LCD): "00. 6701" appears.
OFF	GP/CH indication (LCD): "NO TONE" appears.

(5) Connect the signal generator to the ANTENNA B IN connector with DC cut fixture, and perform the procedures (3) and (4) above.

Step 2: Tuner [2] to Tuner [6] checking

When the TUNER UNIT WRU-801A is installed in the Tuner [2] (Tuner unit 2) to Tuner [6] (Tuner unit 6) of the WRR-801A, perform the adjustments from procedures (1) to (5) of "Step 1. Tuner [1] (Tuner unit 1) checking" on the respective tuner units that are installed in the WRR-801A.

When performing the above described checking change the following details as shown below, of the "Step 1. Tuner [1] (Tuner unit 1) checking".

Tuner [1] → Tuner [2], [3], [4], [5], and [6]

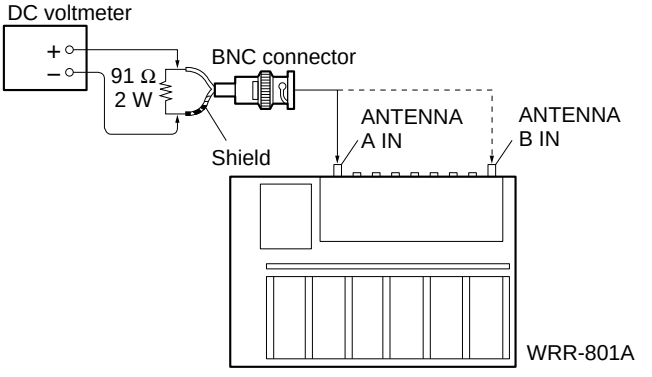
10. DC +9 V OUT voltage check

Equipment and Tools

- DC voltmeter (digital multi meter)
- Metal film resistor 91 Ω 2W (Part No. 1-214-609-00)

Procedure

(1) Connect the DC voltmeter to the ANTENNA A IN/DC 9 V OUT connector with 91 Ω resistor as shown figure below.



(2) Check that DC output voltage of ANTENNA A IN/DC 9 V OUT connector is +9 ±0.7 Vdc.

(3) Connect the DC voltmeter to the ANTENNA B IN/DC 9 V OUT connector with 91 Ω resistor.

(4) Check that DC output voltage of ANTENNA B IN/DC 9 V OUT connector is +9 ±0.7 Vdc.

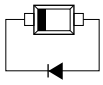
SECTION 4
SEMICONDUCTOR PIN ASSIGNMENTS

Semiconductors of which functions are equivalent are described here. For parts replacement, refer to the section of Spare Parts in this manual. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

ここに記載されている半導体は，それぞれの機能を等価的に表したものです。　なお，互換性のない型名を併記していることがありますので，部品を交換するときは，Spare Partsの章を参照してください。
等価回路はICメーカーのデータブックに従いました。

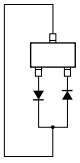
DIODE

—TOP VIEW—



1SS355
1SS355TE-17

—TOP VIEW—

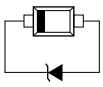


1SV234-TB

—TOP VIEW—

EC10QS-04
EC10QS04-TE12L5

—TOP VIEW—



HZU3.0B1TRF

—TOP VIEW—

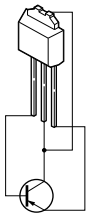
RB411D
RB411D-T146

LED

—TOP VIEW—

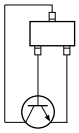
SML-310DTT86
SML-310LTT86
SML-310MTT86

TRANSISTOR

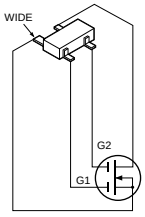


2SB1202FAST
2SB1202FAT-TL

—TOP VIEW—

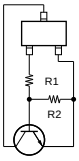


2SC4738-YGR-TE85L
2SD2216-Q (TOSHIBA)
2SD596-T1DV4
2SD596DV345



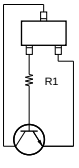
3SK239AXRTL

—TOP VIEW—



UN9213
RN1104-TE85L

—TOP VIEW—

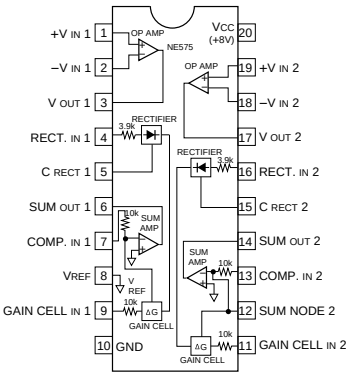


DTC323TK
(R1=2.2 K)
DTC323TKT146
(R1=2.2 K)

IC

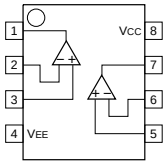
NE575DK (SIGNETICS)FLAT PACKAGE
NE575DK-T

LOW VOLTAGE COMPANDOR
—TOP VIEW—



NJM2904V(TE2) (JRC)FLAT PACKAGE(SMALL)

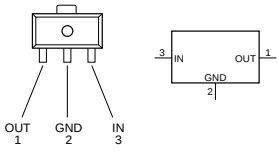
DUAL OPERATIONAL AMPLIFIERS
(SINGLE-SUPPLY TYPE)
—TOP VIEW—



TYPE	VCC - VEE
828 TYPE	+5 to +36V
2244 TYPE	+2.5 to +36V
2904 TYPE	+3 to +24V
3404 TYPE	+4 to +32V
3414 TYPE	+3 to +10V
4572 TYPE	+4 to +14V
5216 TYPE	+4 to +32V
7022 TYPE	+3 to +16V
7062 TYPE	+3 to +16V
75W01 TYPE	+3 to +10V
33172 TYPE	+3 to +44V
OTHERS	+3 to +36V

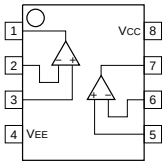
NJM78L06UA-TE1

POSITIVE VOLTAGE REGULATOR
—SIDE VIEW—



NJM4558V-TE2 (JRC)FLAT PACKAGE(SMALL)
NJM4560M (JRC)FLAT PACKAGE
NJM4560M-TE2
NJM5532M (JRC)FLAT PACKAGE
NJM5532M(TE2)

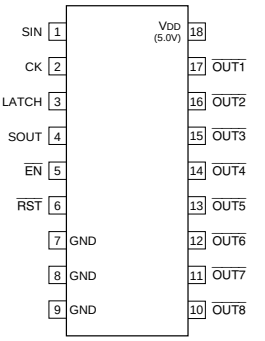
DUAL OPERATIONAL AMPLIFIERS
(DUAL-SUPPLY TYPE)
—TOP VIEW—



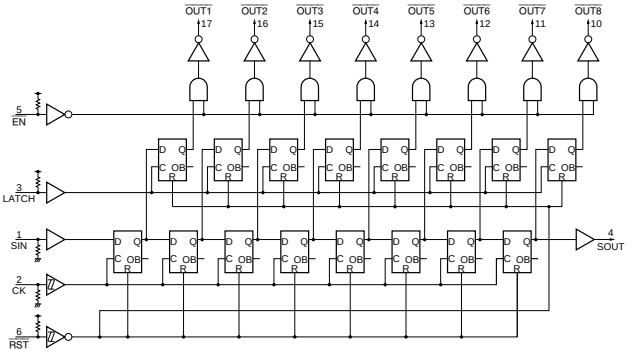
TYPE	VCC	VEE
062/072/082/4556A/ M5218/BA15218/ 33178/34182 TYPES	+2 to +16V	−2 to −16V
4580 TYPE	+2 to +18V	−2 to −18V
5532 TYPE	+3 to +20V	−3 to −20V
CXA1297 TYPE	+5 to +12V	−5 to −12V
M5219/M5220 TYPES	+5 to +22.5V	−5 to −22.5V
MC33077DR2	+2.5 to +18V	−2.5 to −18V
NJM2100 TYPE	+1 to +3.5V	−1 to −3.5V
OP-297 TYPE	+2 to +20V	−2 to −20V
OTHERS	+5 to +16V	−5 to −16V

TA8122AF (TSB)FLAT PACKAGE
TA8122AF(J.TP2)

BU2114F(ROHM)FLAT PACKAGE
CMOS SHIFT RESISTOR WITH LATCH
—TOP VIEW—

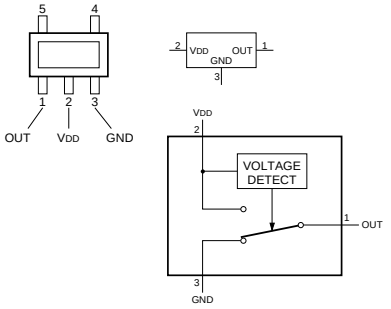


SIN	:	SERIAL DATA INPUT
CK	:	SHIFT CLOCK INPUT
LATCH	:	LATCH INPUT
SOUT	:	SHIFT RESISTOR (FINAL STAGE) OUTPUT
EN	:	ENABLE INPUT
RST	:	RESET INPUT
OUT1 - OUT8	:	SHIFT RESISTOR LATCH OUTPUT1-8



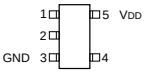
S-80751SN-JF-T1 (SEIKO I&E)FLAT PACKAGE 4.392 - 4.608 V

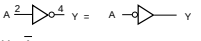
C-MOS VOLTAGE DETECTOR
—TOP VIEW—



TC4S69F (TOSHIBA)CHIP PACKAGE
TC4S69F(TE85R)

C-MOS INVERTER
—TOP VIEW—





Y = $\overline{A}$

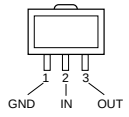
A	Y
0	1
1	0

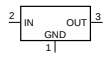
0 ; LOW LEVEL
1 ; HIGH LEVEL

TYPE	VDD
7S04F 7SU04F 7SU04FU	+2 to +6V
4S69F 4SU69F	+3 to +18V
7SH04FU 7SHU04FU	+2 to +5.5V

S-81250PG-PD-S
S-81250PG-PD-T1

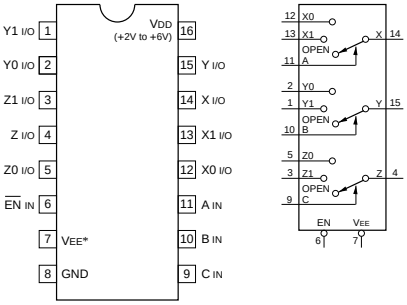
THREE TERMINAL POSITIVE VOLTAGE REGULATOR
—TOP VIEW—





TC74HC4053AFS (TOSHIBA)FLAT PACKAGE
TC74HC4053AFS-EL

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
—TOP VIEW—



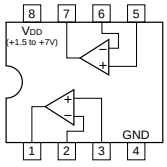
VEE*; VDD – VEE = +3V to +12V
VEE ≦ GND

CONTROL INPUTS				ON CHANNEL		
EN	SELECT					
	C	B	A			
0	0	0	0	Z0	Y0	X0
0	0	0	1	Z0	Y0	X1
0	0	1	0	Z0	Y1	X0
0	0	1	1	Z0	Y1	X1
0	1	0	0	Z1	Y0	X0
0	1	0	1	Z1	Y0	X1
0	1	1	0	Z1	Y1	X0
0	1	1	1	Z1	Y1	X1
1	×	×	×	OPEN		

0 ; LOW LEVEL
1 ; HIGH LEVEL
× ; DON'T CARE

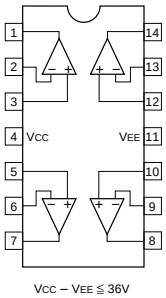
TC75W51FU-TE12R (TOSHIBA)

C-MOS DUAL OPERATIONAL AMPLIFIER
—TOP VIEW—



UPC4574G2 (NEC)
UPC4574G2-T1

QUAD OPERATIONAL AMPLIFIER
—TOP VIEW—



VCC – VEE ≦ 36V

SECTION 5
BLOCK DIAGRAM

Outline

The WRR-801A consists of the following boards and tuner unit:

Board name	Ref. No.
MB-761 board	1000 to 1900 series
CN-1510 board	110, 1000, 1900 series

Tuner Unit (WRU-801A)

The tuner unit consists of the RF board and the DP board.
Tuner unit works as a PLL synthesizer diversity tuner, and its power voltage (DC +9 V) is supplied from the CN-1510 board through the MB-761 board.
The RF (radio frequency) signals are input from both antenna A and antenna B, and the audio signal is output to the MB-761 board through the CN-1510 board. The RF board is composed of RF block, audio block, CPU block and voltage regulator.
The DP board is composed of display block and the operation block.

Power Supply Block

The switching regulator generates DC±9 V and they are supplied to the MB-761 board. Generated DC±9 V are used for the audio output amplifiers inside the MB-761 board. Generated +9 V is supplied to the tuner unit, too.

Audio Block

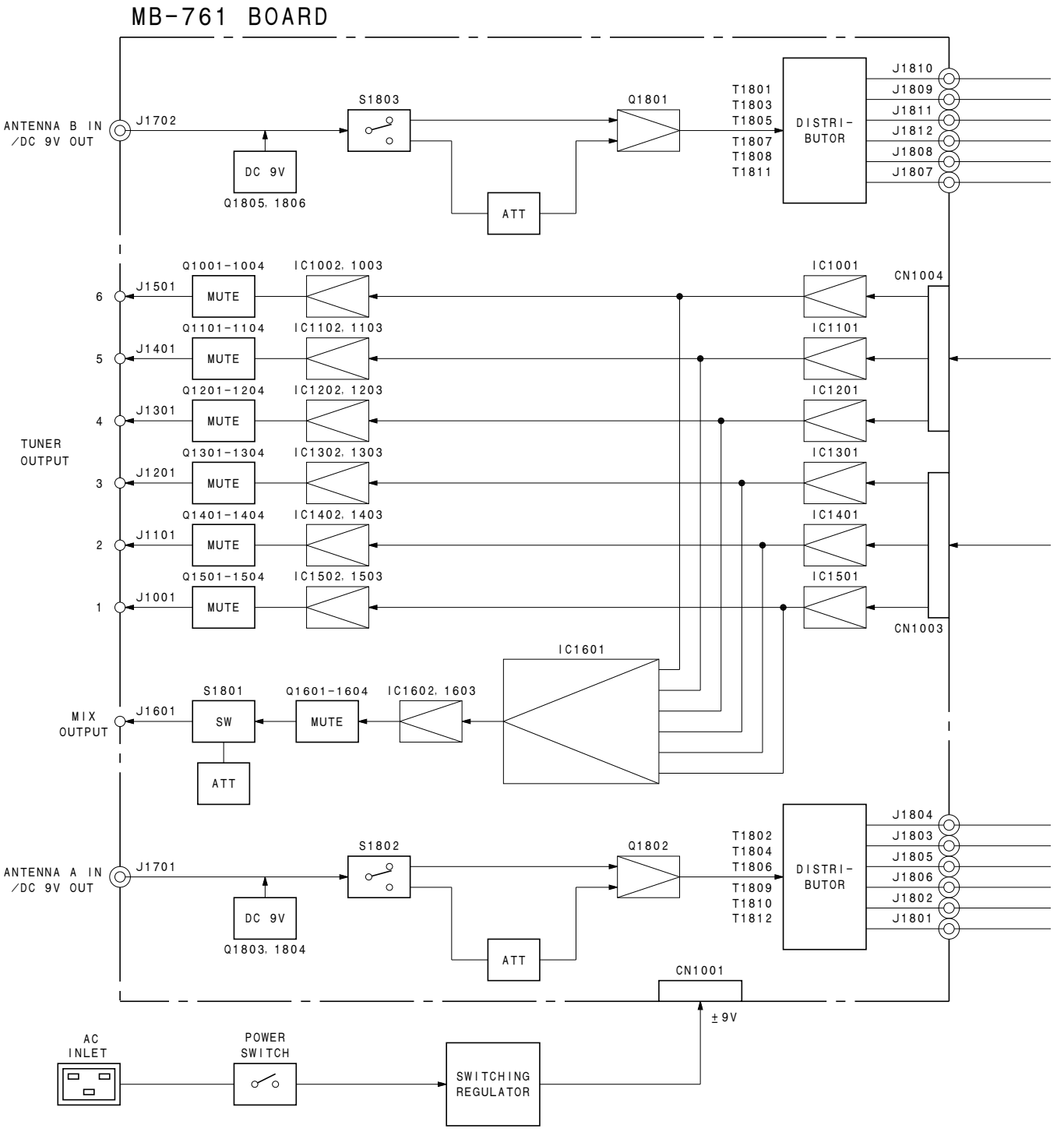
The audio signal (AF) output from each tuner unit (WRU-801A) are input to the MB-761 board through the CN-1510 board. Signals are then output from the output connectors (J1001 to J1501) in line levels after passing through the filter amplifiers (IC1001 to IC1501), output amplifiers (IC1001 to IC1501) and audio muting circuits (Q1001 to Q1504). The audio signals from each tuner unit are input to the mixer (IC1601), then output from the MIX output connector (J1601).

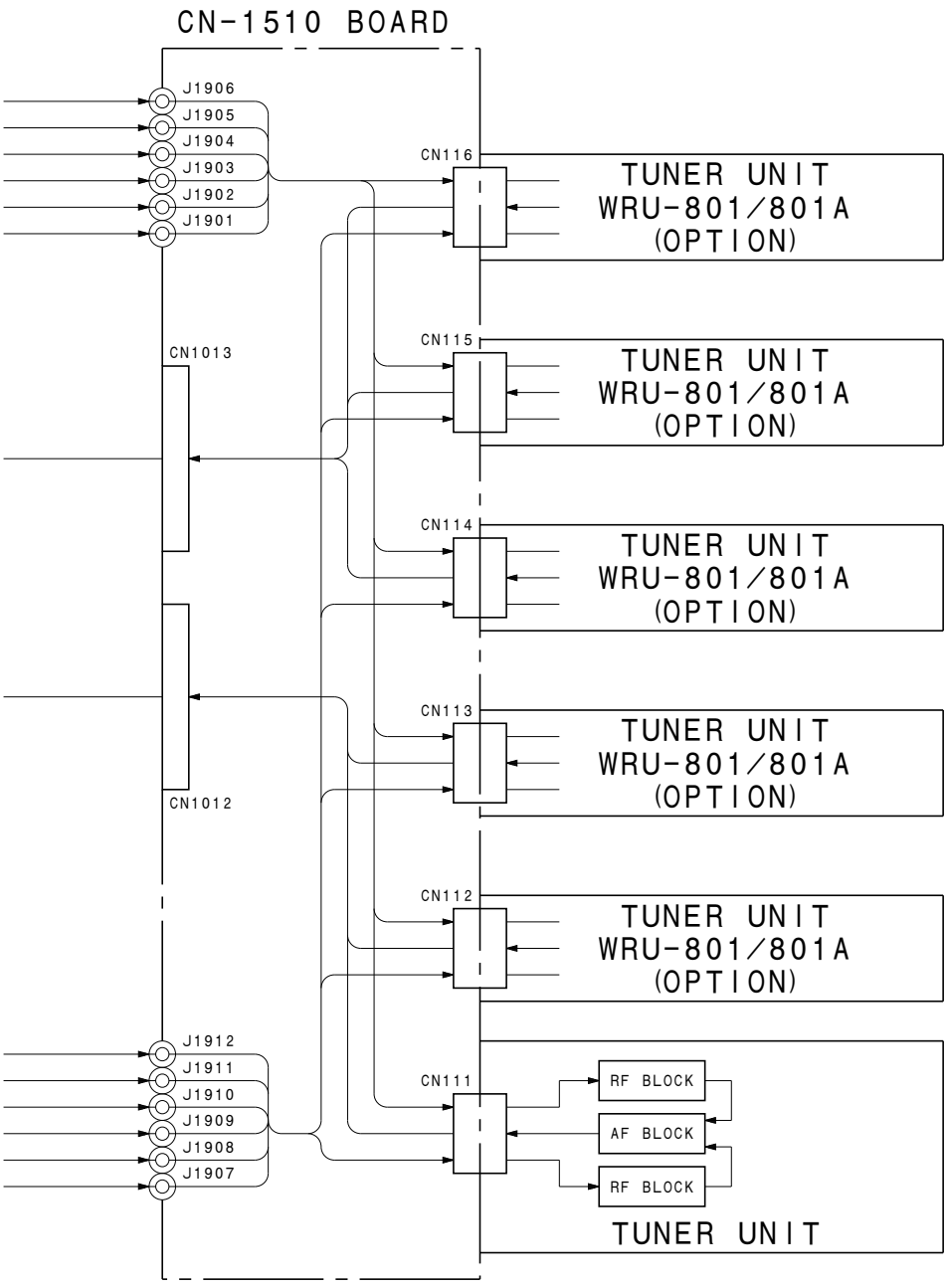
MB-761 Board

The RF signal input block and audio signal output block are mounted on this board. This board consists of the RF signal distributor/attenuator circuit, audio output circuit and audio signal muting circuit.

CN-1510 Board

This board functions as a relay board for power voltages, RF signals and audio signals between the tuner unit and MB-761 board.


MB-761 BOARD
ANTENNA B IN /DC 9V OUT
J1702
DC 9V
Q1805, 1806
S1803
ATT
Q1801
T1801
T1803
T1805
T1807
T1808
T1811
DISTRI-BUTOR
J1810
J1809
J1811
J1812
J1808
J1807
TUNER OUTPUT
6
5
4
3
2
1
J1501
J1401
J1301
J1201
J1101
J1001
MUTE
Q1001-1004
Q1101-1104
Q1201-1204
Q1301-1304
Q1401-1404
Q1501-1504
IC1002, 1003
IC1102, 1103
IC1202, 1203
IC1302, 1303
IC1402, 1403
IC1502, 1503
IC1001
IC1101
IC1201
IC1301
IC1401
IC1501
CN1004
CN1003
IC1601
MIX OUTPUT
J1601
S1801
SW
ATT
Q1601-1604
IC1602, 1603
ANTENNA A IN /DC 9V OUT
J1701
DC 9V
Q1803, 1804
S1802
ATT
Q1802
T1802
T1804
T1806
T1809
T1810
T1812
DISTRI-BUTOR
J1804
J1803
J1805
J1806
J1802
J1801
CN1001
±9V
AC INLET
POWER SWITCH
SWITCHING REGULATOR



OVERALL BLOCK

SECTION 6
SPARE PARTS

6-1. NOTES ON REPAIR PARTS

(1) Safety Related Components Warning

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

(2) Standardization of Parts

Repair parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to “accommodating the improved parts and/or engineering changes” or “standardization of genuine parts”.

This manual's exploded views and electrical spare parts list are indicating the part numbers of “the standardized genuine parts at present” .

(3) Stock of Parts

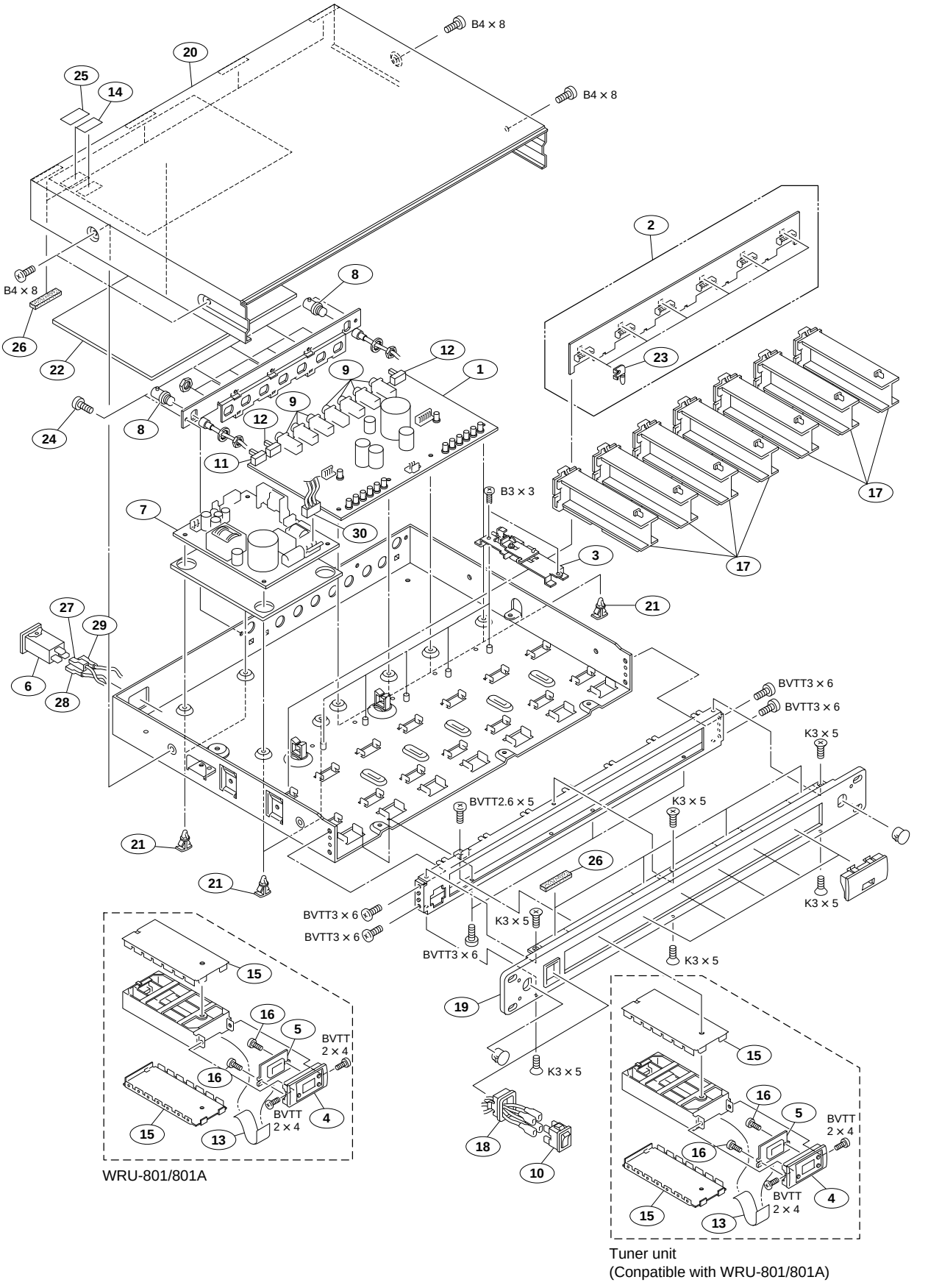
Parts marked with “o” SP (Supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with “o” will be processed, but allow for additional delivery time.

(4) Units for Capacitors, Inductors and Resistors

The following units are assumed in schematic diagrams, electrical parts list and exploded views unless otherwise specified.

Capacitors : μF
Inductors : μH
Resistors : Ω

6-2. EXPLODED VIEW AND PARTS LIST



No.	Part No.	SP	Description
WRR-801A			
1	A-8317-215-A	o	MOUNTED CIRCUIT BOARD, MB-761
2	A-8317-217-A	o	MOUNTED CIRCUIT BOARD, CN-1510
3	A-8317-219-A	o	ROCKING ASSY
4	A-8317-231-A	s	CASE ASSY, F
5	A-8317-232-A	s	LCD ASSY
6	⚠ 1-251-627-11	s	INLET (WITH NOISE FILTER)
7	⚠ 1-468-230-11	s	REGULATOR, SWITCHING
8	1-562-576-11	s	ADAPTER, CONVERSION BNC PIN
9	1-568-519-31	o	JACK, LARGE TYPE
10	⚠ 1-771-181-11	s	SWITCH, POWER
11	1-771-185-11	s	SWITCH, SLIDE
12	1-771-186-11	s	SWITCH, SLIDE
13	1-783-026-11	s	WIRE, FLAT TYPE (33 CORE)
14	2-536-133-01	o	LABEL, WARNING, OUTDOOR
15	2-545-180-01	o	LID
16	2-545-186-01	s	+BTP 2X5 (W2)
17	2-545-189-02	o	RAIL
18	2-545-196-01	o	BARRIER (SW)
19	2-545-197-01	o	PANEL, FRONT
20	2-545-200-01	o	COVER
21	2-545-206-01	o	SPACER (PB)
22	2-545-216-01	o	INSULATING SHEET (B)
23	2-545-338-01	o	SPRING (F)
24	2-545-387-11	s	+BTT M3 (S TITE)
25	3-703-845-01	o	LABEL (N) (U/C), MAIN CAUTION
26	3-897-034-01	o	CUSHION (SMALL), ESCUTCHEON
27	⚠ 1-955-536-11	o	HARNESS, SUB (EARTH)
28	⚠ 1-958-375-11	o	HARNESS, SUB (LIVE)
29	⚠ 1-958-376-11	o	HARNESS, SUB (NEUTRAL)
30	⚠ 1-958-377-11	o	HARNESS, SUB (SW-RE)
WRU-801A			
5	A-8317-232-A	s	LCD ASSY
13	1-783-026-11	s	WIRE, FLAT TYPE (33 CORE)
15	2-545-180-01	o	LID
16	2-545-186-01	s	+BTP 2X5 (W2)

6-3. ELECTRICAL PARTS LIST

CN-1510 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8317-217-A	o	MOUNTED CIRCUIT BOARD, CN-1510
1pc	2-545-338-01	o	SPRING (F)
CN111	1-569-668-11	s	CONNECTOR BB, 10P
CN112	1-569-668-11	s	CONNECTOR BB, 10P
CN113	1-569-668-11	s	CONNECTOR BB, 10P
CN114	1-569-668-11	s	CONNECTOR BB, 10P
CN115	1-569-668-11	s	CONNECTOR BB, 10P
CN116	1-569-668-11	s	CONNECTOR BB, 10P
CN1012	1-564-711-11	o	CONNECTOR (SMALL TYPE) 9P, MALE
CN1013	1-564-711-11	o	CONNECTOR (SMALL TYPE) 9P, MALE

MB-761 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8317-215-A	o	MOUNTED CIRCUIT BOARD, MB-761
C1004	1-163-038-91	s	CERAMIC 0.1uF 25V
C1005	1-163-038-91	s	CERAMIC 0.1uF 25V
C1006	1-162-967-11	s	CERAMIC, CHIP 0.0033uF 10% 50V
C1007	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1008	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1009	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1010	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1011	1-163-038-91	s	CERAMIC 0.1uF 25V
C1012	1-163-038-91	s	CERAMIC 0.1uF 25V
C1013	1-163-038-91	s	CERAMIC 0.1uF 25V
C1014	1-163-038-91	s	CERAMIC 0.1uF 25V
C1022	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1023	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1024	1-162-958-11	s	CERAMIC, CHIP 270PF 5% 50V
C1025	1-104-544-11	s	FILM 0.0027uF 5% 50V
C1027	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1028	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1029	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1104	1-163-038-91	s	CERAMIC 0.1uF 25V
C1105	1-163-038-91	s	CERAMIC 0.1uF 25V
C1106	1-162-967-11	s	CERAMIC, CHIP 0.0033uF 10% 50V
C1107	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1108	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1109	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1110	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1111	1-163-038-91	s	CERAMIC 0.1uF 25V
C1112	1-163-038-91	s	CERAMIC 0.1uF 25V
C1113	1-163-038-91	s	CERAMIC 0.1uF 25V
C1114	1-163-038-91	s	CERAMIC 0.1uF 25V
C1122	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1123	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1124	1-162-958-11	s	CERAMIC, CHIP 270PF 5% 50V
C1125	1-104-544-11	s	FILM 0.0027uF 5% 50V
C1127	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1128	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1129	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1204	1-163-038-91	s	CERAMIC 0.1uF 25V
C1205	1-163-038-91	s	CERAMIC 0.1uF 25V
C1206	1-162-967-11	s	CERAMIC, CHIP 0.0033uF 10% 50V
C1207	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1208	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1209	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1210	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1211	1-163-038-91	s	CERAMIC 0.1uF 25V
C1212	1-163-038-91	s	CERAMIC 0.1uF 25V
C1213	1-163-038-91	s	CERAMIC 0.1uF 25V
C1214	1-163-038-91	s	CERAMIC 0.1uF 25V
C1222	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1223	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1224	1-162-958-11	s	CERAMIC, CHIP 270PF 5% 50V
C1225	1-104-544-11	s	FILM 0.0027uF 5% 50V
C1227	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1228	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1229	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1304	1-163-038-91	s	CERAMIC 0.1uF 25V
C1305	1-163-038-91	s	CERAMIC 0.1uF 25V
C1306	1-162-967-11	s	CERAMIC, CHIP 0.0033uF 10% 50V

(MB-761 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C1307	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1308	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1309	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1310	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1311	1-163-038-91	s	CERAMIC 0.1uF 25V
C1312	1-163-038-91	s	CERAMIC 0.1uF 25V
C1313	1-163-038-91	s	CERAMIC 0.1uF 25V
C1314	1-163-038-91	s	CERAMIC 0.1uF 25V
C1322	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1323	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1324	1-162-958-11	s	CERAMIC, CHIP 270PF 5% 50V
C1325	1-104-544-11	s	FILM 0.0027uF 5% 50V
C1327	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1328	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1329	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1404	1-163-038-91	s	CERAMIC 0.1uF 25V
C1405	1-163-038-91	s	CERAMIC 0.1uF 25V
C1406	1-162-967-11	s	CERAMIC, CHIP 0.0033uF 10% 50V
C1407	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1408	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1409	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1410	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1411	1-163-038-91	s	CERAMIC 0.1uF 25V
C1412	1-163-038-91	s	CERAMIC 0.1uF 25V
C1413	1-163-038-91	s	CERAMIC 0.1uF 25V
C1414	1-163-038-91	s	CERAMIC 0.1uF 25V
C1422	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1423	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1424	1-162-958-11	s	CERAMIC, CHIP 270PF 5% 50V
C1425	1-104-544-11	s	FILM 0.0027uF 5% 50V
C1427	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1428	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1429	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1504	1-163-038-91	s	CERAMIC 0.1uF 25V
C1505	1-163-038-91	s	CERAMIC 0.1uF 25V
C1506	1-162-967-11	s	CERAMIC, CHIP 0.0033uF 10% 50V
C1507	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1508	1-126-205-11	s	ELECT 47uF 20% 6.3V
C1509	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1510	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1511	1-163-038-91	s	CERAMIC 0.1uF 25V
C1512	1-163-038-91	s	CERAMIC 0.1uF 25V
C1513	1-163-038-91	s	CERAMIC 0.1uF 25V
C1514	1-163-038-91	s	CERAMIC 0.1uF 25V
C1522	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1523	1-164-739-11	s	CERAMIC 560PF 5% 50V
C1524	1-162-958-11	s	CERAMIC, CHIP 270PF 5% 50V
C1525	1-104-544-11	s	FILM 0.0027uF 5% 50V
C1527	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1528	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1529	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1604	1-163-038-91	s	CERAMIC 0.1uF 25V
C1605	1-163-038-91	s	CERAMIC 0.1uF 25V
C1606	1-162-967-11	s	CERAMIC, CHIP 0.0033uF 10% 50V
C1607	1-126-206-11	s	ELECT 100uF 20% 6.3V
C1608	1-126-206-11	s	ELECT 100uF 20% 6.3V
C1609	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1610	1-164-315-11	s	CERAMIC, CHIP 470PF 5% 50V
C1611	1-163-038-91	s	CERAMIC 0.1uF 25V

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Ref. No. or Q'ty	Part No.	SP	Description
C1612	1-163-038-91	s	CERAMIC 0.1uF 25V
C1613	1-163-038-91	s	CERAMIC 0.1uF 25V
C1614	1-163-038-91	s	CERAMIC 0.1uF 25V
C1615	1-162-959-11	s	CERAMIC, CHIP 330PF 5% 50V
C1616	1-126-206-11	s	ELECT 100uF 20% 6.3V
C1617	1-126-206-11	s	ELECT 100uF 20% 6.3V
C1627	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1628	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1629	1-163-009-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1701	1-126-541-11	s	ELECT 330uF 20% 16V
C1702	1-126-541-11	s	ELECT 330uF 20% 16V
C1703	1-128-548-11	s	ELECT 4700uF 20% 25V
C1704	1-128-548-11	s	ELECT 4700uF 20% 25V
C1705	1-163-031-11	s	CERAMIC, CHIP 0.01uF 50V
C1706	1-163-031-11	s	CERAMIC, CHIP 0.01uF 50V
C1713	1-128-548-11	s	ELECT 4700uF 20% 25V
C1714	1-163-038-91	s	CERAMIC 0.1uF 25V
C1715	1-163-038-91	s	CERAMIC 0.1uF 25V
C1716	1-113-981-11	s	TANTAL 22uF 20% 20V
C1717	1-164-346-11	s	CERAMIC 1uF 16V
C1718	1-113-981-11	s	TANTAL 22uF 20% 20V
C1720	1-124-779-00	s	ELECT 10uF 20% 16V
C1722	1-113-981-11	s	TANTAL 22uF 20% 20V
C1801	1-128-400-11	s	ELECT 47uF 20% 25V
C1802	1-163-031-11	s	CERAMIC, CHIP 0.01uF 50V
C1803	1-163-031-11	s	CERAMIC, CHIP 0.01uF 50V
C1804	1-124-779-00	s	ELECT 10uF 20% 16V
C1806	1-163-038-91	s	CERAMIC 0.1uF 25V
C1807	1-163-038-91	s	CERAMIC 0.1uF 25V
C1810	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1811	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1812	1-162-916-11	s	CERAMIC, CHIP 12PF 5% 50V
C1813	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1814	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C1815	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1816	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1817	1-162-916-11	s	CERAMIC, CHIP 12PF 5% 50V
C1818	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1820	1-162-910-11	s	CERAMIC, CHIP 5PF 50V
C1822	1-162-910-11	s	CERAMIC, CHIP 5PF 50V
C1824	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1826	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1830	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C1831	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C1832	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C1833	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C1834	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C1835	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C1841	1-162-908-11	s	CERAMIC, CHIP 3PF 50V
C1842	1-162-908-11	s	CERAMIC, CHIP 3PF 50V
C1843	1-162-908-11	s	CERAMIC, CHIP 3PF 50V
C1844	1-162-908-11	s	CERAMIC, CHIP 3PF 50V
C1845	1-162-908-11	s	CERAMIC, CHIP 3PF 50V
C1846	1-162-908-11	s	CERAMIC, CHIP 3PF 50V
C1847	1-162-908-11	s	CERAMIC, CHIP 3PF 50V
C1848	1-162-908-11	s	CERAMIC, CHIP 3PF 50V
C1849	1-162-908-11	s	CERAMIC, CHIP 3PF 50V
C1850	1-162-908-11	s	CERAMIC, CHIP 3PF 50V
C1851	1-162-908-11	s	CERAMIC, CHIP 3PF 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C1852	1-162-908-11	s	CERAMIC, CHIP 3PF 50V
C1853	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1854	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1855	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1856	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1857	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1858	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1861	1-128-400-11	s	ELECT 47uF 20% 25V
C1862	1-163-031-11	s	CERAMIC, CHIP 0.01uF 50V
C1863	1-163-031-11	s	CERAMIC, CHIP 0.01uF 50V
C1864	1-124-779-00	s	ELECT 10uF 20% 16V
C1865	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C1866	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C1867	1-162-910-11	s	CERAMIC, CHIP 5PF 50V
C1868	1-162-910-11	s	CERAMIC, CHIP 5PF 50V
C1869	1-162-912-11	s	CERAMIC, CHIP 7PF 50V
C1870	1-162-912-11	s	CERAMIC, CHIP 7PF 50V
C1871	1-163-251-11	s	CERAMIC, CHIP 100PF 5% 50V
C1873	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1874	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1875	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1876	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1877	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1878	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C1879	1-135-179-21	s	TANTALUM 2.2uF 10% 16V
C1880	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C1882	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1883	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1884	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1885	1-115-416-11	s	CERAMIC 1000PF 5% 25V
C1886	1-162-909-11	s	CERAMIC 4PF 50V
C1890	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1891	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1892	1-162-964-11	s	CERAMIC, CHIP 0.001uF 10% 50V
C1893	1-115-416-11	s	CERAMIC 1000PF 5% 25V
C1894	1-162-909-11	s	CERAMIC 4PF 50V
C1895	1-135-179-21	s	TANTALUM 2.2uF 10% 16V
C1896	1-162-974-11	s	CERAMIC, CHIP 0.01uF 50V
C1897	1-128-400-11	s	ELECT 47uF 20% 25V
C1898	1-124-779-00	s	ELECT 10uF 20% 16V
C1901	1-128-400-11	s	ELECT 47uF 20% 25V
C1902	1-128-400-11	s	ELECT 47uF 20% 25V
C1903	1-128-400-11	s	ELECT 47uF 20% 25V
C1904	1-128-400-11	s	ELECT 47uF 20% 25V
C1905	1-128-400-11	s	ELECT 47uF 20% 25V
C1906	1-128-400-11	s	ELECT 47uF 20% 25V
C1907	1-128-400-11	s	ELECT 47uF 20% 25V
C1908	1-128-400-11	s	ELECT 47uF 20% 25V
C1909	1-128-400-11	s	ELECT 47uF 20% 25V
C1910	1-128-400-11	s	ELECT 47uF 20% 25V
C1911	1-128-400-11	s	ELECT 47uF 20% 25V
C1912	1-128-400-11	s	ELECT 47uF 20% 25V
C1913	1-128-400-11	s	ELECT 47uF 20% 25V
C1914	1-128-400-11	s	ELECT 47uF 20% 25V
C2001	1-107-826-11	s	CERAMIC 0.1uF 10% 16V
C2002	1-107-826-11	s	CERAMIC 0.1uF 10% 16V
CN1001	1-564-104-00	o	CONNECTOR (B3P-VH) 3P, MALE

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Ref. No. or Q'ty	Part No.	SP	Description
D1701	8-719-210-39	s	DIODE EC10QS04
D1706	8-719-044-84	s	DIODE HZU3.0B1TRF
D1707	8-719-210-39	s	DIODE EC10QS04
D1708	8-719-975-40	s	DIODE RB411D
D1801	8-719-057-58	s	DIODE 1SV234-TB
D1802	8-719-057-58	s	DIODE 1SV234-TB
D1803	8-719-057-58	s	DIODE 1SV234-TB
D1804	8-719-057-58	s	DIODE 1SV234-TB
D1806	8-719-057-58	s	DIODE 1SV234-TB
D1807	8-719-057-58	s	DIODE 1SV234-TB
D1808	8-719-057-58	s	DIODE 1SV234-TB
D1809	8-719-057-58	s	DIODE 1SV234-TB
D1810	8-719-057-58	s	DIODE 1SV234-TB
D1812	8-719-057-58	s	DIODE 1SV234-TB
D1813	8-719-057-58	s	DIODE 1SV234-TB
D1814	8-719-057-58	s	DIODE 1SV234-TB
D1815	8-719-057-58	s	DIODE 1SV234-TB
D1816	8-719-057-58	s	DIODE 1SV234-TB
D1820	8-719-988-62	s	DIODE 1SS355TE
D1821	8-719-988-62	s	DIODE 1SS355TE
IC1001	8-759-141-05	s	IC UPC4574G2
IC1002	8-759-745-64	s	IC NJM4560M
IC1003	8-759-700-94	s	IC NJM5532M
IC1101	8-759-141-05	s	IC UPC4574G2
IC1102	8-759-745-64	s	IC NJM4560M
IC1103	8-759-700-94	s	IC NJM5532M
IC1201	8-759-141-05	s	IC UPC4574G2
IC1202	8-759-745-64	s	IC NJM4560M
IC1203	8-759-700-94	s	IC NJM5532M
IC1301	8-759-141-05	s	IC UPC4574G2
IC1302	8-759-745-64	s	IC NJM4560M
IC1303	8-759-700-94	s	IC NJM5532M
IC1401	8-759-141-05	s	IC UPC4574G2
IC1402	8-759-745-64	s	IC NJM4560M
IC1403	8-759-700-94	s	IC NJM5532M
IC1501	8-759-141-05	s	IC UPC4574G2
IC1502	8-759-745-64	s	IC NJM4560M
IC1503	8-759-700-94	s	IC NJM5532M
IC1601	8-759-141-05	s	IC UPC4574G2
IC1602	8-759-745-64	s	IC NJM4560M
IC1603	8-759-700-94	s	IC NJM5532M
IC1703	8-759-364-70	s	IC S-80751SN-JF-T1
IC1704	8-759-209-57	s	IC TC4S69F
IC1705	8-759-209-57	s	IC TC4S69F
IC1803	8-759-346-20	s	IC NJM78L06UA-TE1
IC2001	8-759-161-52	s	IC S-81250PG-PD-S
J1001	1-568-519-31	s	JACK, LARGE TYPE
J1101	1-568-519-31	s	JACK, LARGE TYPE
J1201	1-568-519-31	s	JACK, LARGE TYPE
J1301	1-568-519-31	s	JACK, LARGE TYPE
J1401	1-568-519-31	s	JACK, LARGE TYPE
J1501	1-568-519-31	s	JACK, LARGE TYPE
J1601	1-568-519-31	s	JACK, LARGE TYPE
J1701	1-568-548-11	s	JACK, MINIATUER PIN
J1702	1-568-548-11	s	JACK, MINIATUER PIN
J1801	1-568-548-11	s	JACK, MINIATUER PIN
J1802	1-568-548-11	s	JACK, MINIATUER PIN
J1803	1-568-548-11	s	JACK, MINIATUER PIN

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Ref. No. or Q'ty	Part No.	SP	Description
J1804	1-568-548-11	s	JACK, MINIATUER PIN
J1805	1-568-548-11	s	JACK, MINIATUER PIN
J1806	1-568-548-11	s	JACK, MINIATUER PIN
J1807	1-568-548-11	s	JACK, MINIATUER PIN
J1808	1-568-548-11	s	JACK, MINIATUER PIN
J1809	1-568-548-11	s	JACK, MINIATUER PIN
J1810	1-568-548-11	s	JACK, MINIATUER PIN
J1811	1-568-548-11	s	JACK, MINIATUER PIN
J1812	1-568-548-11	s	JACK, MINIATUER PIN
L1801	1-414-117-11	s	INDUCTOR 1UH
L1802	1-414-117-11	s	INDUCTOR 1UH
L1803	1-414-117-11	s	INDUCTOR 1UH
L1805	1-414-461-41	s	INDUCTOR 6.8nH
L1807	1-414-461-41	s	INDUCTOR 6.8nH
L1814	1-414-117-11	s	INDUCTOR 1UH
L1821	1-414-461-41	s	INDUCTOR 6.8nH
L1823	1-414-461-41	s	INDUCTOR 6.8nH
Q1001	8-729-015-39	s	TRANSISTOR DTC323TK
Q1002	8-729-015-39	s	TRANSISTOR DTC323TK
Q1003	8-729-015-39	s	TRANSISTOR DTC323TK
Q1004	8-729-015-39	s	TRANSISTOR DTC323TK
Q1101	8-729-015-39	s	TRANSISTOR DTC323TK
Q1102	8-729-015-39	s	TRANSISTOR DTC323TK
Q1103	8-729-015-39	s	TRANSISTOR DTC323TK
Q1104	8-729-015-39	s	TRANSISTOR DTC323TK
Q1201	8-729-015-39	s	TRANSISTOR DTC323TK
Q1202	8-729-015-39	s	TRANSISTOR DTC323TK
Q1203	8-729-015-39	s	TRANSISTOR DTC323TK
Q1204	8-729-015-39	s	TRANSISTOR DTC323TK
Q1301	8-729-015-39	s	TRANSISTOR DTC323TK
Q1302	8-729-015-39	s	TRANSISTOR DTC323TK
Q1303	8-729-015-39	s	TRANSISTOR DTC323TK
Q1304	8-729-015-39	s	TRANSISTOR DTC323TK
Q1401	8-729-015-39	s	TRANSISTOR DTC323TK
Q1402	8-729-015-39	s	TRANSISTOR DTC323TK
Q1403	8-729-015-39	s	TRANSISTOR DTC323TK
Q1404	8-729-015-39	s	TRANSISTOR DTC323TK
Q1501	8-729-015-39	s	TRANSISTOR DTC323TK
Q1502	8-729-015-39	s	TRANSISTOR DTC323TK
Q1503	8-729-015-39	s	TRANSISTOR DTC323TK
Q1504	8-729-015-39	s	TRANSISTOR DTC323TK
Q1601	8-729-015-39	s	TRANSISTOR DTC323TK
Q1602	8-729-015-39	s	TRANSISTOR DTC323TK
Q1603	8-729-015-39	s	TRANSISTOR DTC323TK
Q1604	8-729-015-39	s	TRANSISTOR DTC323TK
Q1704	8-729-425-64	s	TRANSISTOR 2SD2216-Q
Q1705	8-729-425-64	s	TRANSISTOR 2SD2216-Q
Q1706	8-729-141-75	s	TRANSISTOR 2SD596DV345
Q1801	8-729-035-13	s	TRANSISTOR 3SK239AXRTL
Q1802	8-729-035-13	s	TRANSISTOR 3SK239AXRTL
Q1803	8-729-822-84	s	TRANSISTOR 2SB1202FAST
Q1804	8-729-822-84	s	TRANSISTOR 2SB1202FAST
Q1805	8-729-822-84	s	TRANSISTOR 2SB1202FAST
Q1806	8-729-822-84	s	TRANSISTOR 2SB1202FAST
R1001	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R1002	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1003	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1004	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R1005	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1006	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1007	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1008	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1009	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1010	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1011	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1012	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1013	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1014	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1015	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1017	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1021	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1022	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1023	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R1101	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R1102	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1103	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1104	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R1105	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1106	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1107	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1108	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1109	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1110	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1111	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1112	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1113	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1114	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1115	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1117	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1121	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1122	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1123	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R1201	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R1202	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1203	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1204	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R1205	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1206	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1207	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1208	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1209	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1210	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1211	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1212	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1213	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1214	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1215	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1217	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1221	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1222	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1223	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R1301	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R1302	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1303	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1304	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R1305	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1306	1-218-716-11	s	METAL 10K 0.50% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R1307	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1308	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1309	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1310	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1311	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1312	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1313	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1314	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1315	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1317	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1321	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1322	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1323	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R1401	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R1402	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1403	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1404	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R1405	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1406	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1407	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1408	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1409	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1410	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1411	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1412	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1413	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1414	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1415	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1417	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1421	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1422	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1423	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R1501	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R1502	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1503	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1504	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R1505	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1506	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1507	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1508	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1509	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1510	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1511	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1512	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1513	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1514	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1515	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1517	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1521	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1522	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1523	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R1601	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1602	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1603	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1604	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1605	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1606	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1607	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R1608	1-216-809-11	s	METAL, CHIP 100 5% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R1609	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R1610	1-216-835-11	s	METAL, CHIP 15K 5% 1/16W
R1611	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1612	1-218-716-11	s	METAL 10K 0.50% 1/16W
R1613	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1614	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1615	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1616	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1617	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1618	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1620	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1621	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1622	1-216-811-11	s	METAL, CHIP 150 5% 1/16W
R1623	1-218-709-11	s	METAL 5.1K 0.50% 1/16W
R1627	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1629	1-218-285-11	s	METAL, CHIP 75 5% 1/16W
R1631	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R1633	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R1635	1-218-285-11	s	METAL, CHIP 75 5% 1/16W
R1636	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R1637	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R1638	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R1639	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R1701	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R1702	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1703	1-216-855-11	s	METAL, CHIP 680K 5% 1/16W
R1704	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1705	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R1706	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1708	1-216-295-91	s	RES, CHIP 0
R1709	1-216-295-91	s	RES, CHIP 0
R1801	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R1802	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R1803	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R1804	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1805	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R1806	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R1807	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R1808	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R1821	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R1822	1-216-198-91	s	RESCHIP 1K 5% 1/8W
R1823	1-216-310-00	s	RESCHIP 6.2 5% 1/10W
R1824	1-216-310-00	s	RESCHIP 6.2 5% 1/10W
R1825	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R1826	1-216-198-91	s	RESCHIP 1K 5% 1/8W
R1827	1-216-310-00	s	RESCHIP 6.2 5% 1/10W
R1828	1-216-310-00	s	RESCHIP 6.2 5% 1/10W
R1829	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1830	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1831	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1832	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1833	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1834	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1835	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1836	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1837	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1838	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1839	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1840	1-216-809-11	s	METAL, CHIP 100 5% 1/16W

(MB-761 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R1841	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1842	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1843	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1844	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R1847	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R1848	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1849	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R1850	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1851	1-216-834-11	s	METAL, CHIP 12K 5% 1/16W
R1852	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R1861	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R1862	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R1863	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R1864	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R1865	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
R1866	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R1867	1-216-843-11	s	METAL, CHIP 68K 5% 1/16W
R1868	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R1870	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R1871	1-216-812-11	s	METAL, CHIP 180 5% 1/16W
R1872	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R1873	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R1881	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R1882	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1883	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R1884	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1885	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R1886	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1889	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R1890	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1891	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R1892	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1893	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R1894	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1895	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R1896	1-218-718-11	s	METAL 12K 0.50% 1/16W
R1897	1-216-677-11	s	METAL, CHIP 12K 0.5% 1/10W
R1898	1-218-718-11	s	METAL 12K 0.50% 1/16W
R2001	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R2002	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R2003	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R2004	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R2005	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R2007	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
S1801	1-771-185-11	s	SWITCH, SLIDE
S1802	1-771-186-11	s	SWITCH, SLIDE
S1803	1-771-186-11	s	SWITCH, SLIDE
T1801	1-431-650-11	s	TRANSFORMER, DISTRIBUTION
T1802	1-431-650-11	s	TRANSFORMER, DISTRIBUTION
T1803	1-431-650-11	s	TRANSFORMER, DISTRIBUTION
T1804	1-431-650-11	s	TRANSFORMER, DISTRIBUTION
T1805	1-431-650-11	s	TRANSFORMER, DISTRIBUTION
T1806	1-431-650-11	s	TRANSFORMER, DISTRIBUTION
T1807	1-431-650-11	s	TRANSFORMER, DISTRIBUTION
T1808	1-431-650-11	s	TRANSFORMER, DISTRIBUTION
T1809	1-431-650-11	s	TRANSFORMER, DISTRIBUTION
T1810	1-431-650-11	s	TRANSFORMER, DISTRIBUTION
T1811	1-431-650-11	s	TRANSFORMER, DISTRIBUTION

(MB-761 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
T1812	1-431-650-11	s	TRANSFORMER, DISTRIBUTION

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FRAME
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Ref. No.
or Q'ty  Part No.    SP Description

 1pc    ⚠ 1-251-627-11 s INLET (WITH NOISE FILTER)
 1pc    ⚠ 1-468-230-11 s REGULATOR, SWITCHING
 1pc      1-562-576-11 s ADAPTER, CONVERSION BNC PIN
 1pc    ⚠ 1-771-181-11 s SWITCH, POWER
 1pc      1-783-026-11 s WIRE, FLAT TYPE (33 CORE)

HARNESS (LIVE) : POWER SWITCH to INLET

 1pc    ⚠ 1-958-375-11 o HARNESS, SUB (LIVE)

HARNESS (NEUTRAL) : POWER SWITCH to INLET

 1pc    ⚠ 1-958-376-11 o HARNESS, SUB (NEUTRAL)

HARNESS (SW-RE) : CN1/SWICHING REGULATOR to POWER SWITCH

 1pc    ⚠ 1-958-377-11 o HARNESS, SUB (SW-RE)

HARNESS (ETH) : INLET to EARTH

 1pc    ⚠ 1-955-536-11 o HARNESS, SUB (ETH)
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6-4. SUPPLIED ACCESSORIES

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Ref. No.
or Q'ty  Part No.    SP Description

WRR-801A

 2pcs     1-501-952-11 s ANTENNA
 1pc    ⚠ 1-782-929-11 s CORD, POWER SUPPLY (BS 3P)
 1pc      2-539-564-01 o SHEET, PROTECTION
 1pc      3-860-930-31 s OPERATING INSTRUCTIONS

WRU-801A

 1pc      3-860-931-31 s OPERATING INSTRUCTIONS
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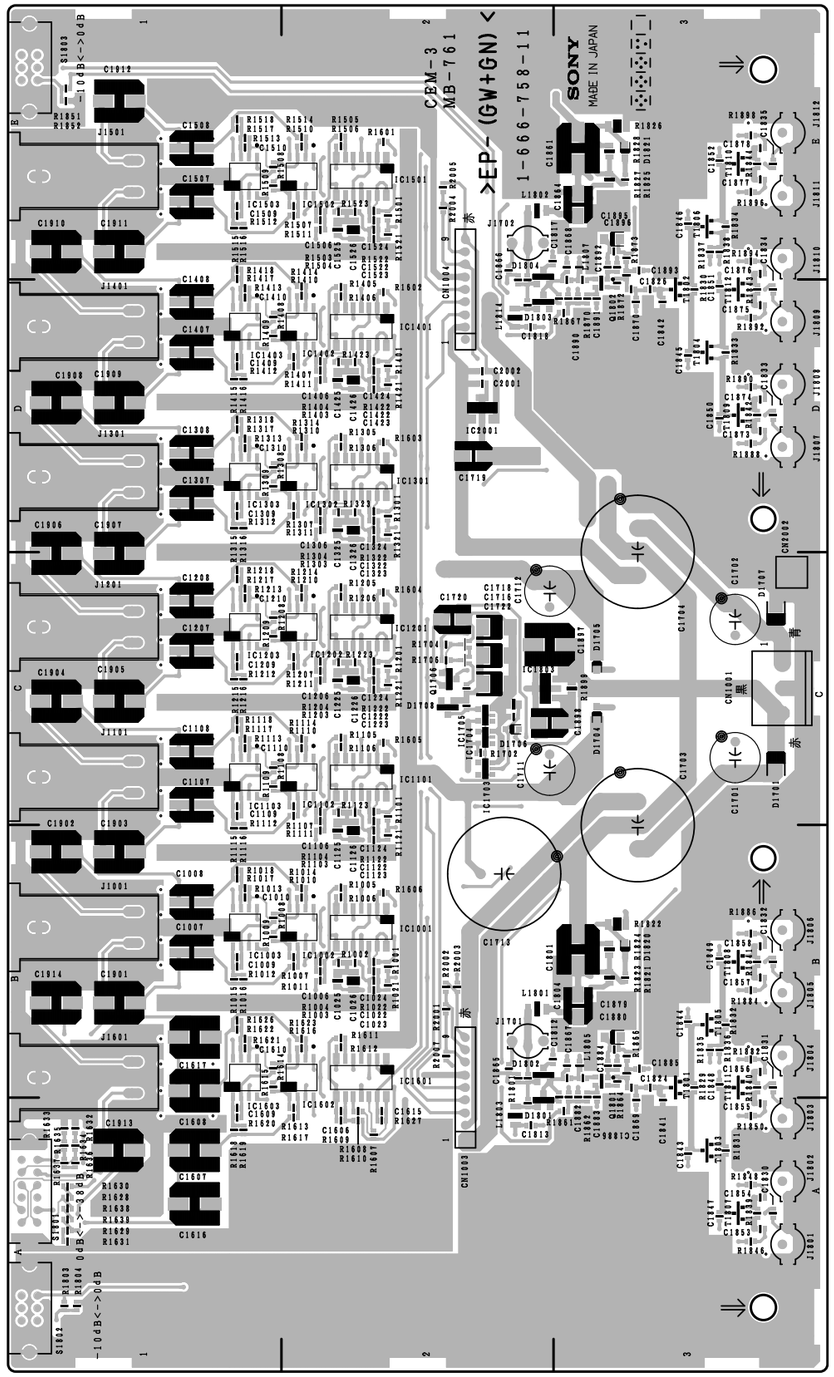
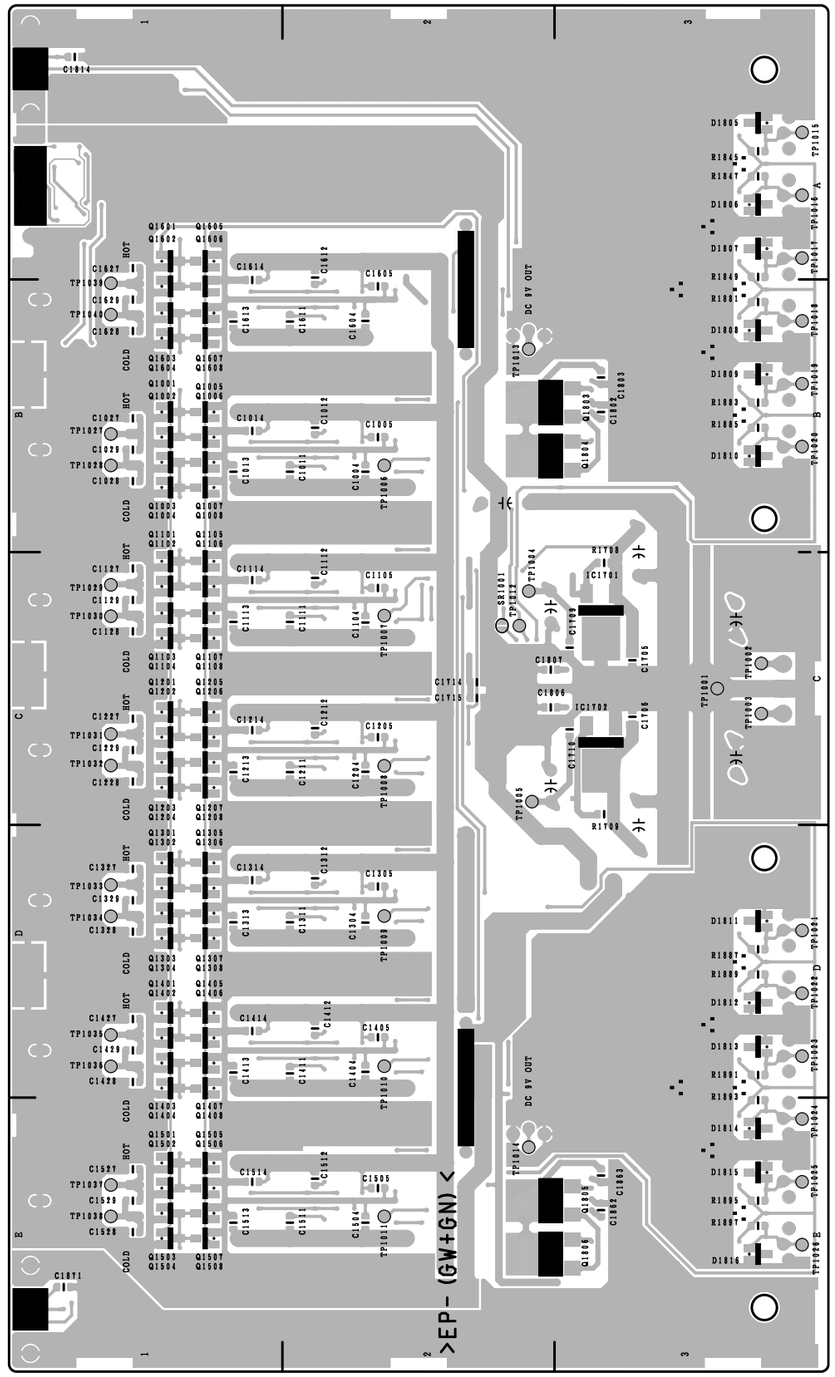
SECTION 7
SCHEMATIC DIAGRAMS AND BOARD LAYOUTS

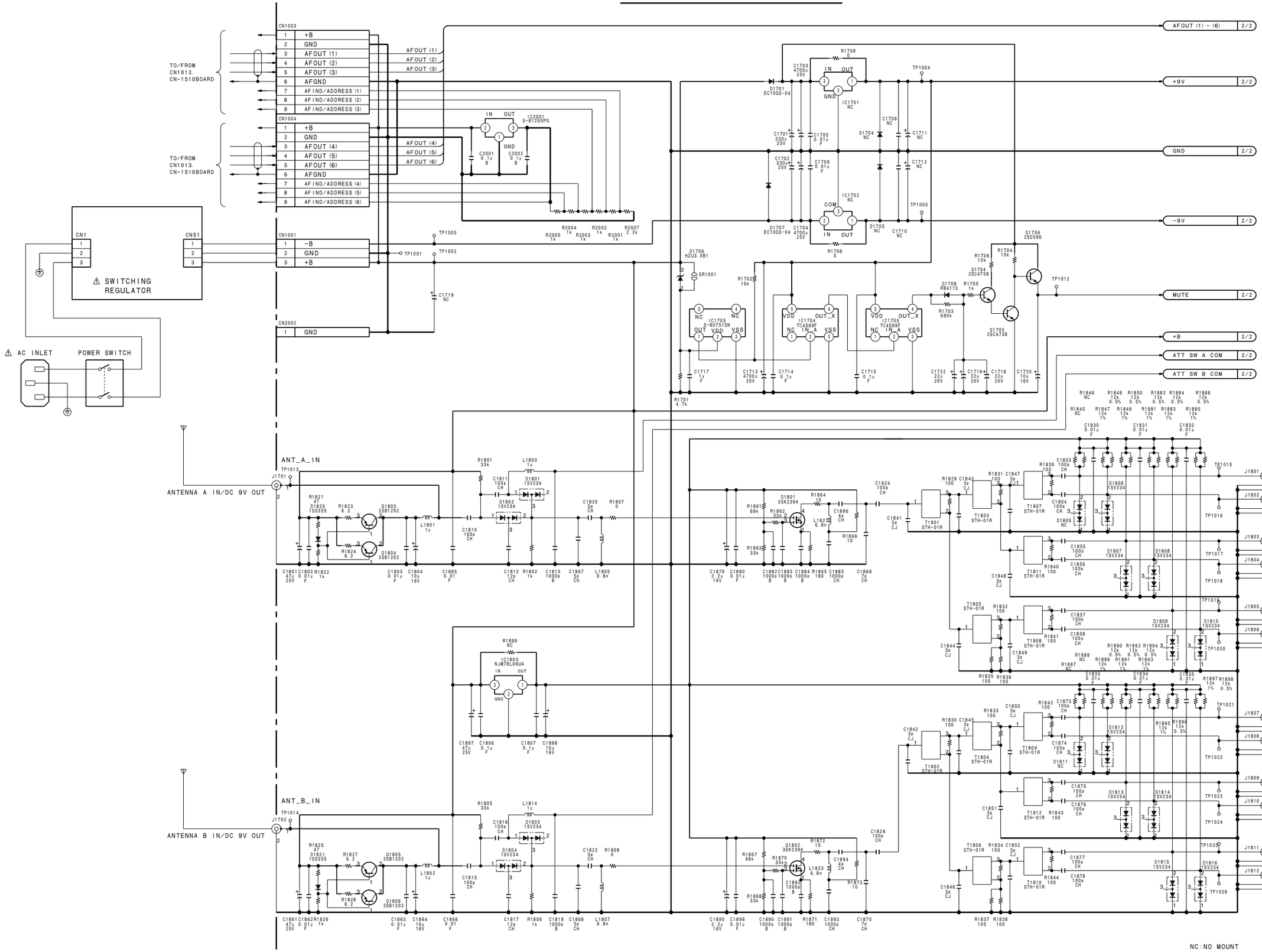
7-1



MB-761 -A SIDE
1-666-758-11

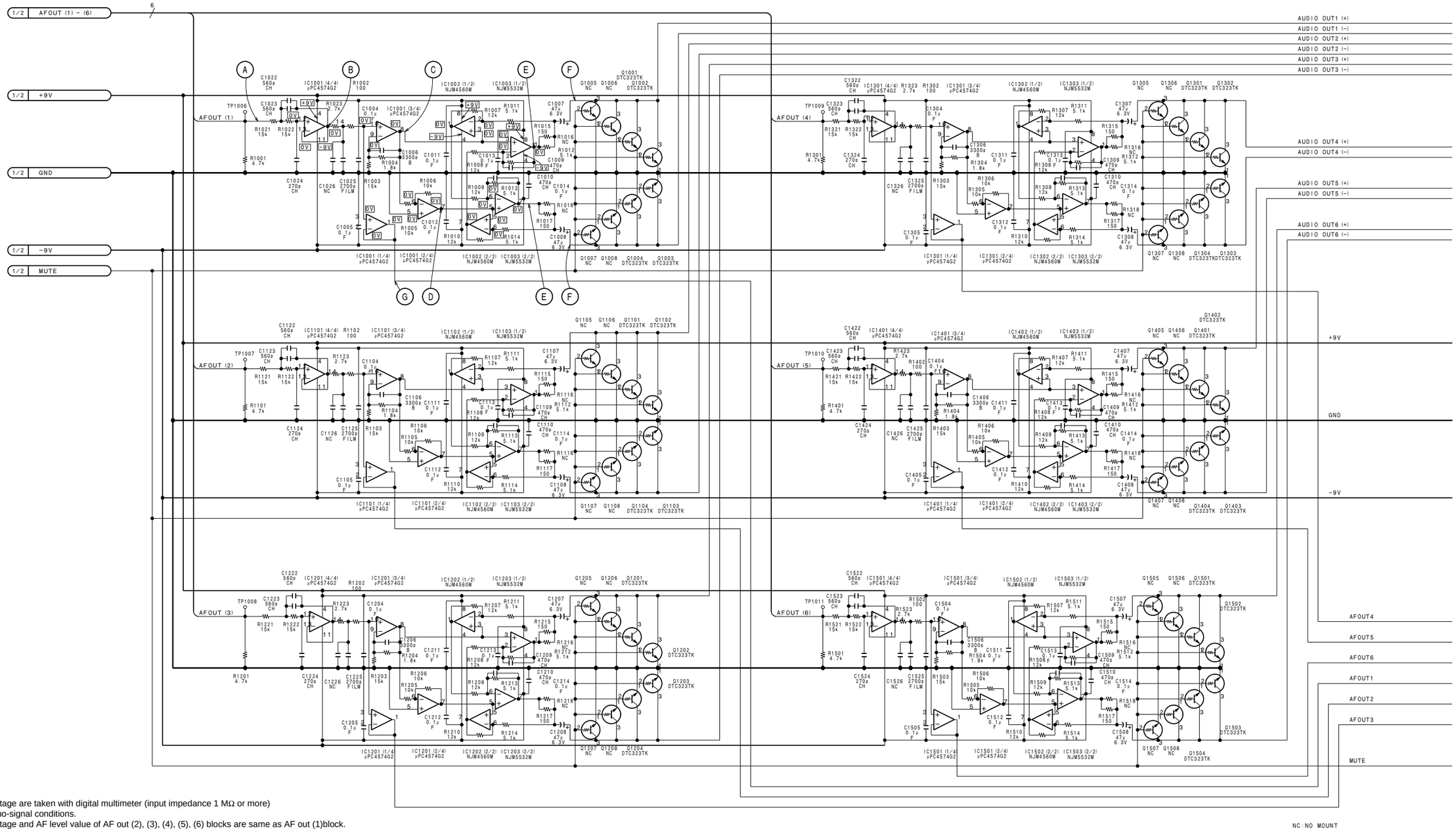


MB-761 -B SIDE
1-666-758-11



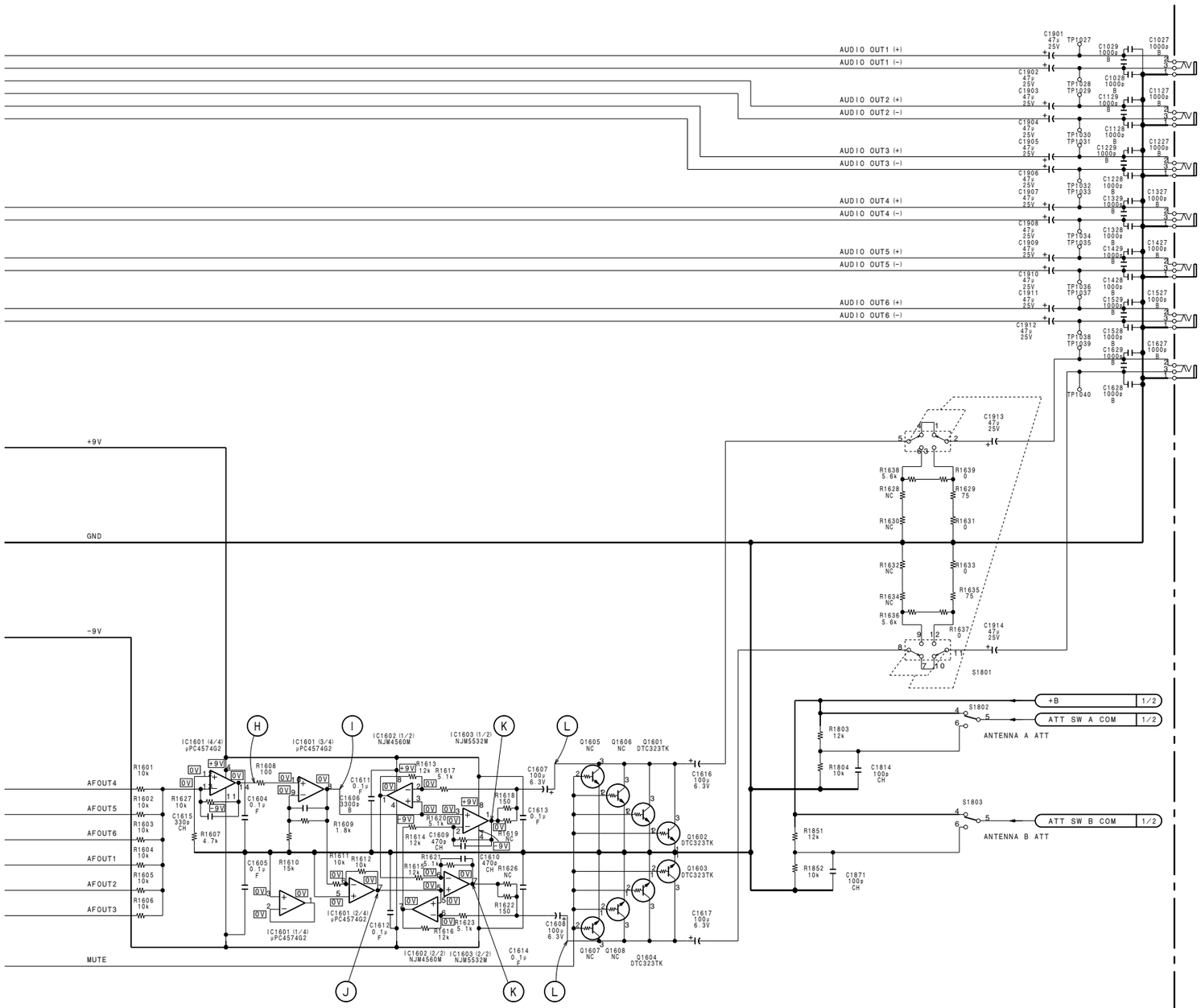
MB-761 (1/2)
BOARD NO.1-666-758-11
WRR-801/801A
B-WRR801A-MB761/M

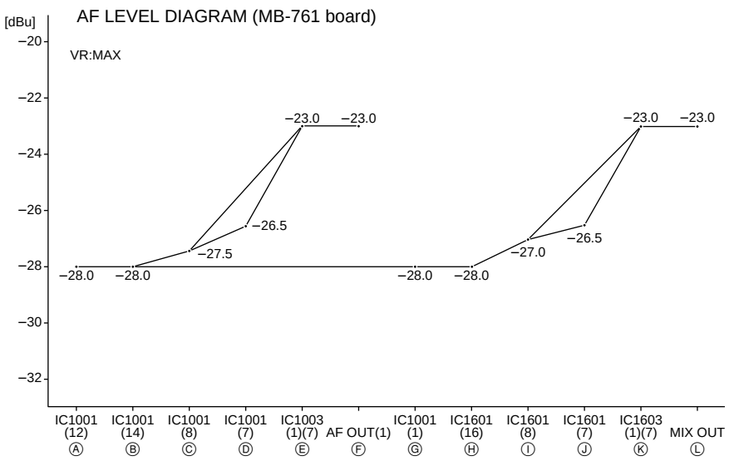
NC:NO MOUNT



NOTE
・DC Voltage are taken with digital multimeter (input impedance 1 MΩ or more) under no-signal conditions.
・DC Voltage and AF level value of AF out (2), (3), (4), (5), (6) blocks are same as AF out (1)block.

注意
・DC電圧値は，デジタルテスタ(入力インピーダンス1 MΩ以上)を使用して無信号入力状態で測定した参考値。
・AF out (2), (3), (4), (5), (6)ブロックの電圧値およびAFレベル値は，AF out (1)ブロックに同じ。





Note:
・The AF level shows the value when the following reference signal is supplied to the ANTENNA A and B IN connectors from a SSG.
RF : Level input 60 dBμ
FM : ±5 kHz deviation at 1 kHz modulation

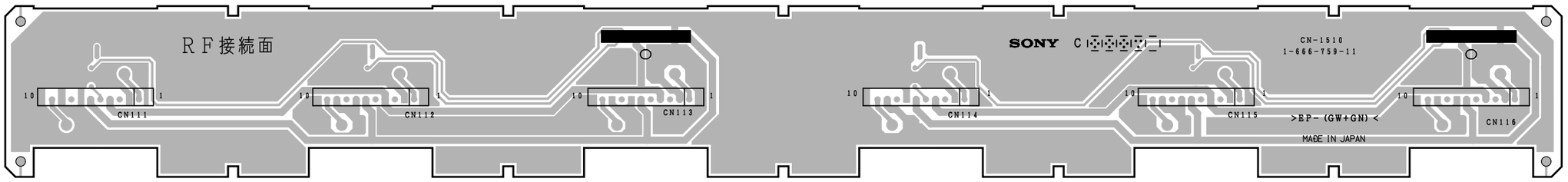
0 dBμ = 1 μV(at no load)
0 dBμ = −113 dBm(0 dBm = 1 mW, 50 Ω load)
0 dBu = 0.775 Vms

注意
・AFレベル値はSSGよりANTENNA A またはB IN コネクタに下記基準を入力した時の参考値。
RF ：60 dBμ入力
FM ：周波数偏移 ±5 kHz, 変調周波数 1 kHz

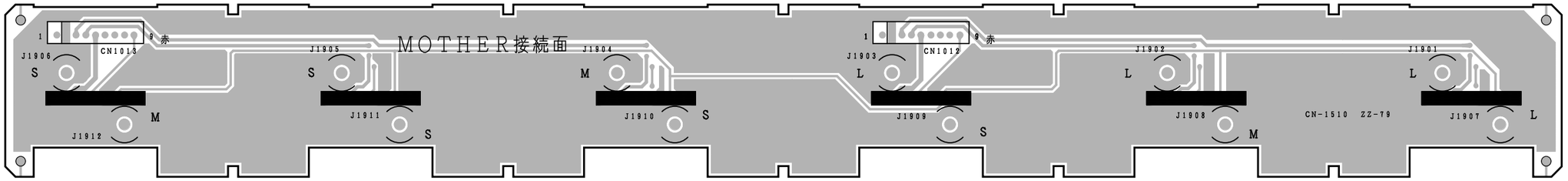
0 dBμ = 1 μV(開放端電圧)
0 dBμ = −113 dBm(0 dBm = 1 mW, 50 Ω負荷)
0 dBu = 0.775 Vms

MB-761 (2/2)

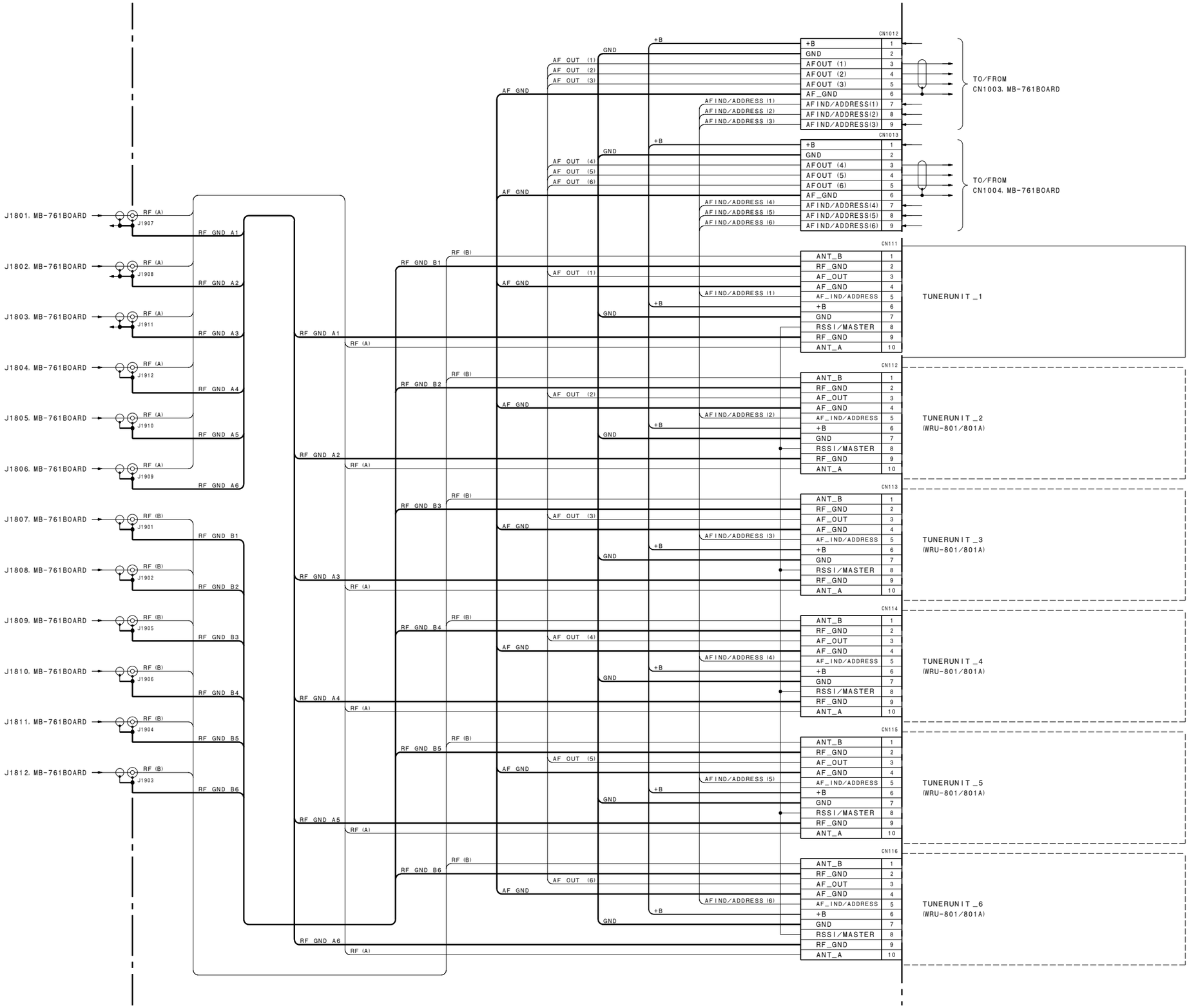
BOARD NO.1-666-758-11
WRR-801/801A
B-WRR801A-MB761/M



CN-1510 -A SIDE
1-666-759-11



CN-1510 -B SIDE
1-666-759-11



CN-1510
BOARD NO.1-666-759-11
WRR-801/801A
B-WRR801A-CN1510/M

WRR-801A (AU) E
WRU-801A (AU) E
9-976-860-01

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